AIMING TO FULLY UNDERSTAND HOW WE HEAL: TREATMENT AND ASSESSMENT PROTOCOL DEVELOPMENT FOR CLINICAL RESEARCH ON PERFORMANCE-SPECIFIC SOCIAL ANXIETY DISORDER.

by

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ABSTRACT

The purpose of this project was to develop innovative assessment and treatment protocols for clinical research on performance-specific Social Anxiety Disorder (SAD). The initial step was to conduct an investigation of OEI (Observed and Experiential Integration; a trauma-root-focused therapy) and BRAIN (Breathing, Relaxation, Autogenics, Imagery, and grouNding; a trauma-symptom-focused therapy) on performance-specific SAD. Similarities between trauma and anxiety symptoms suggest that there can be a traumatic cause to SAD (Calamaras, Anderson, Tannenbaum, & Zimand, 2014; Erwin et al., 2006; Stein, Walker, & Forde, 1996; Wild, Hackmann, & Clark, 2008). This was a pilot test to explore the assessment and treatment protocols as they related to specificity and sensitivity of measures. Descriptive analyses in this pilot study revealed connections between treatment types and symptom processes which were activated. Symptoms can be distinguished as: (a) narrow spectrum symptoms, such as speaker confidence and public speaking behaviour; (b) psychophysiological symptoms, such as electrodermal activity; or (c) broad spectrum symptoms, such as general anxiety and depression. In this pilot study, both trauma-root-focused and trauma-symptom-focused treatments resulted in improvements in: (a) narrow spectrum symptoms of speaker confidence and public speaking behaviour. Additionally, in response to trauma-root-focused treatment: (a) broad spectrum symptoms improved and (b) psychophysiological activation associated with past traumatic social experiences was alleviated (Porges, 2007; van der Kolk, 2001, 2002; van der Kolk, B. A., Hopper & Osterman, 2001). As a result of this study, it is suggested that diverse types of measurements (including self-report, behaviour sampling, and psychophysiological measures), will be helpful for understanding (a) broad spectrum, (b) narrow spectrum, and (c) psychophysiological symptoms. The potential traumatic origin for performance-specific SAD

was supported by results of the descriptive analyses in this study. The findings of this study will also be useful for establishing measurement parameters for clinical research on social anxiety. If these patterns continue to be supported by additional research, such results will help: (a) those with performance-specific SAD, (b) clinicians, and (c) future clinical researchers.

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CHAPTER 1: INTRODUCTION

Imagine standing on a stage. In front of you is a full auditorium of eager listeners waiting to hear a dynamic speech. Does your heart race? Do your palms sweat? Does the first line of your speech leave your mind, as you worry about losing your place or forgetting your speech? If your answer is "yes" to any of these questions, you are not alone. Community surveys report that up to one-third of people experience anxiety related to public speaking (Kessler, Stein, & Berglund, 1998; Stein, Walker, & Forde, 1996).

The fear of negative evaluation by others is at the core of performance-specific Social Anxiety Disorder (SAD; American Psychological Association, 2013). SAD is the broader anxiety disorder under which public speaking anxiety (PSA) falls. This type of social anxiety shows itself most in public speeches or performances, but can be evident in places such as classes, meetings, or social engagements. There are many physiological, emotional, and behavioural responses to this fear, including: worry, anxiety, nervousness, sweating, shaking, or dizziness. These fears and physiological responses are usually associated with (a) worries about other people noticing the nervousness, or (b) fear of embarrassment (Calamaras, Anderson, Tannenbaum, & Zimand, 2014).

Researchers have sought to understand the impact of performance-specific SAD. In a cluster analysis, PSA was found to be the most common subtype within three subtypes of SAD: (a) generalized, (b) non-generalized, and (c) specific phobia, including PSA (Furmark, Tillfors, Stattin, Ekselius, & Fredrikson, 2000). Public speaking fears made up 40% of the social phobia group. Mannuzza et al. (1995) found that PSA co-occurred in 88% of participants with Generalized Social Anxiety, and 79% of those suffering from non-generalized Social Phobias. The magnitude of this problem warrants exploration regarding effects of PSA.

Calamaras et al. (2014) found that those with performance-specific SAD had lower income, more unemployment, and less education. Stein et al. (1996) found similar implications of anxiety related to public speaking in a community sample. Those who reported PSA had lower incomes, higher rates of unemployment, and less education. Half of these individuals had only PSA and no comorbid anxieties. These correlations do not confirm that PSA caused these negative outcomes, but subjective interview findings by Stein et al. support the limiting influence of such fears on ability to pursue educational, career, social, and other major goals. The collection of these findings supports a reciprocal effect, and constitutes sufficient reason to research and develop effective treatments for performance-specific SAD. Treatments for performance-specific SAD will help individuals achieve their educational and employment potentials.

Many approaches have been used to treat SAD. These include: Cognitive Behavioural Therapy, Exposure Therapy, combined Exposure Therapy and Cognitive Restructuring, and mindfulness- and acceptance-based therapy. There may, however, be merit in using trauma treatments to treat such anxiety, as results of several studies suggest that anxiety disorders can be traced back to childhood abuse or socially traumatic events, leading to symptoms similar to those of Posttraumatic Stress Disorder (PTSD). Erwin et al. (2006) found that more than 95% of their sample of patients with SAD reported past traumatic events. Of this group, 78% reported that these traumatic experiences caused symptoms of avoidance, re-experiencing, or hyperarousal lasting more than three months. Wild, Hackmann, and Clark (2008) found that memory re-scripting of socially traumatic memories helped individuals with SAD. Participants were less likely to accept the beliefs which arose from their memories, and had lower anxiety scores during visualizations of their feared social situations than those in a control group. Results of these

trauma-informed studies of anxiety reveal the contribution of prior trauma to the development of later anxiety disorders, suggesting that trauma treatment may be a helpful approach for performance-specific SAD.

Two types of treatments were used to address the traumatic aspect of performance-specific SAD in this study. The first is Observed and Experiential Integration (OEI; Bradshaw, Cook, & McDonald, 2011) which focuses on treating the traumatic root (original traumatic experience or cause) of the anxiety. The second is a mindfulness, relaxation, and grounding protocol known as BRAIN (Breathing, Relaxation, Autogenics, Imagery, and grouNding) based on techniques described by Davis, Eshelman, and McKay (1995) and Dennison and Dennison (1986, 1994). This treatment focuses on neutralizing the symptoms of trauma as they arise. The purpose in using these two types of treatment is to see how they differently effect how participants experience changes in their performance-specific SAD.

OEI is a new treatment for psychological trauma (Bradshaw, Cook, & McDonald, 2011). This approach has been subjected to two randomized controlled trials (Bradshaw, McDonald, Grace, Detwiler, & Austin, 2014; Bradshaw et al., 2017) and found to be an effective treatment for PTSD. OEI has been used in hundreds of thousands of hours of clinical practice over a period of 20 years (R. A. Bradshaw, personal communication, June 15, 2015). Within these hours, OEI has been used successfully to treat performance-specific SAD which manifested as public speaking anxiety, usually in 1-3 sessions. To follow up these promising clinical observations, this study constitutes the first formal investigation of OEI to treat SAD.

BRAIN helps users to calm their bodies and minds when faced with stressors or when practicing mindfulness (Davis, Eshelman, & McKay, 1995). The main ways this treatment works with the physiological trauma symptoms is through: (a) diaphragmatic breathing, (b)

progressive muscular relaxation, (c) autogenics, (d) imagery, and (e) grounding. There is some evidence this treatment can help individuals cope with their current trauma symptoms (Taylor et al., 2003).

This study was an initial effort to see how a trauma-root focused and a trauma-symptom-focused treatments interacted with performance-specific SAD. This pilot study was designed to prepare research guidelines and assessment protocols for future research investigating factors not addressed by current theories of social anxiety. The main reasons for this pilot study were to assess sensitivity and specificity of measures, given the heavy response demand of multiple complex measures in this study (Appendix A).

Different dimensions of assessments were used to see how treatments affected the symptoms of performance-specific SAD. These assessments included: (a) self report, (b) behavioural, and (c) psychophysiological measures. Such an involved assessment protocol had the potential for a high response demand on participants. This pilot study increased understanding of the importance of multimodal assessment despite high response demand. Readers wanting to view the list and order of assessments used in this study should see Appendix A.

A further goal of this study was to alleviate performance-specific SAD in participants, so they could enroll in broader public speaking skill development programs (e.g., Toastmasters) or at least be more comfortable using skills they currently possess. As these individuals gain public speaking skills and confidence, they can pursue education, career, and social goals which were previously unachievable.

CHAPTER 2: LITERATURE REVIEW

There is a great deal of literature on anxiety symptoms and treatment. Literature regarding the following topics will be reviewed in this chapter: (a) Social Anxiety Disorder (SAD) with *performance-only* specifier, (b) current treatments for SAD, (c) the commonly missed traumatic aspects of SAD, and (d) current trauma treatments. The following sections of this chapter describe the treatments used in this study: (a) Observed and Experiential Integration (OEI) and (b) BRAIN (a grounding and relaxation protocol). The chapter concludes with (a) rationales for the study, (b) objectives, (c) hypotheses, and (d) research questions.

Social Anxiety Disorder (Social Phobia) with Performance-Only Specifier

Social Anxiety Disorder (SAD) is the broad term for a group of fears related to social situations (American Psychological Association, 2013). The diagnostic criteria for SAD according to the DSM-5 is: (a) fear about social situations (one or more) where there is fear of scrutiny by others; (b) fear of acting in a way which will show anxiety symptoms; (c) the situation always prompts this fear response; (d) contexts which would cause this anxiety are avoided; (e) the fear/anxiety is greater than the threat of the actual event; (f) the anxiety, fear, or avoidance is present for at least six months; (g) this fear/anxiety causes clinically significant distress; (h) the symptoms cannot be explained by use of a substance; (i) the symptoms cannot be better explained by another disorder; and (j) any other medical conditions are clearly unrelated to the cause of symptoms. This can be further specified by *performance-only,* in which the fears are specifically connected to speaking or performing in public.

Comorbidity. There are mixed reports on whether performance-specific SAD is less comorbid with other disorders than more general social fears, or if it is equally comorbid. If this subtype is less comorbid, it becomes a perfect subtype to study for treating a pure form of

anxiety. Each of the following two paragraphs address one article on comorbidity of performance-specific SAD. Authors of the first article found performance anxieties to be less comorbid while the authors of the next article reported both to be comorbid with depression and more general anxiety symptoms.

Kessler et al. (1998) described the incidence of, and distinctions between, public speaking anxieties and anxieties about other social situations. Data analyzed in the study were collected as part of the National Comorbidity Survey (n = 8,098) which had: (a) an age range of 15-54 years, (b) an 82.4% response rate, and (c) sociodemographic variables. The researchers used the Composite International Diagnostic Interview to assess for Social Phobia (SP). They evaluated interviewees for SP by asking participants to share their fears or avoidances of six situations: (a) using a washroom away from home, (b) speaking in public, (c) eating or drinking in public, (d) writing while someone watches, (d) talking to someone when you do not have something to say, and (e) talking when in front of a small group. Data analyses revealed two subtypes: (a) speaking fears, and (b) more expansive social fears. Those who had general social fears usually had many comorbid social fears (usually of the performance or interaction variety), while one-third of those with speaking fears reported speaking fears in isolation. This subtype showed much less comorbidity with other DSM-III-R disorders when compared to the general social fear subtype. More recent references were sought to further substantiate this division; however, there is a marked paucity of PSA literature since the mid-1990s. The authors found that 35.8% of respondents had pure speaking fears, which is much higher than the 8.5% who had only one of any of the other social fears in the survey. This supports the contention that speaking fears are less comorbid than other social anxieties.

Knappe et al. (2011) also explored social phobia subtypes in terms of clinical (avoidance,

age of onset, comorbidities, impairments) and vulnerability factors (behavioural inhibition, parental rearing, and parental psychopathology). Using the Munich-Composite International Diagnostic Interview they studied a population sample (n = 3,021; aged 14-24 years) for more than ten years. They found two subtypes of social fears: (a) interaction, and (b) performance fears (such as PSA). Both types of fears are associated with high levels of avoidance, comorbidity with depression or anxiety, and impairment. The weighted percentage of participants who reported fear of speaking in front of others was 24.8%. The authors also found that parental (multigenerational) anxiety disorders were positively associated with performance-related social fears (such as public speaking anxiety) but this association was less evident in those with isolated social phobias. Whether or not performance-specific SAD is equally or less comorbid than more general social anxiety, this subtype of SAD does appear to have an impact on the lives of those who struggle with this anxiety.

Impact of Performance-Specific Social Anxiety Disorder. Considering the potential for limited comorbidity, one may be quick to disregard the impact of a performance-only social anxiety, but there are several areas of life which can be greatly effected by such a fear. Stein et al. (1996) studied the prevalence, and repercussions, of social phobia in a community sample of 499 people residing in Winnipeg, Manitoba. Thirty-four percent of the sample reported high anxiety when speaking to large audiences. Anxious thoughts reported included: (a) “doing or saying something embarrassing (64%); (b) “having one’s mind go blank” (74%), (c) “being unable to continue talking” (63%); (d) “saying foolish things or not making sense” (59%); and (e) “trembling, shaking, or showing other signs of anxiety” (80%). If the diagnostic criteria for social phobia in the DSM-IV were applied to the data, within the group reporting public speaking fears: (a) 7% said such fears interfered with their abilities to find jobs, get new jobs, or be

selected for better jobs; (b) 4% said this interfered with their normal social interactions; (c) 14% said such fears interfered with their education; and (d) 17% reported their anxiety-related to public speaking interfered with major areas of their lives. If the criteria for social phobia were broadened to include all those with anxiety related to large group public speaking, 31% said that fear had caused them significant distress. They also found those with significant public speaking anxiety had less lucrative employment, and less education, than those without. The fact that individuals have reported performance-specific SAD impacted their lives, should lead to inquiry about the best ways to treat SAD.

Anxiety Treatments

There are many treatments being used currently to treat anxiety. Some of the common treatments for social anxiety are: (a) behaviour therapy (particularly exposure), (b) cognitive behaviour therapy (CBT), (c) cognitive behaviour group therapy (CBGT), and (c) mindfulness and acceptance-based treatments. Theory and research on these common types of treatment are presented in the following sections.

Behaviour Therapy. The focus of Behaviour Therapy (BT) is to change behaviour by decreasing the occurrence of maladaptive behaviours, and increasing adaptive behaviours (Antony & Roemer, 2011). Behaviours are seen as (a) functional, and (b) resulting from reinforcement or punishment. Within this view, behaviours are seen as a result of the individual's interaction with environment, and not an intrinsic part of the individual. The focus of BT is not on early life experiences which may have contributed to the current problems but, instead, focuses on changing the current interactions with the environment. Therapy is done using a direct approach where the therapist may give suggestions and advice. The role of the client is to actively engage in treatment by practicing behavioural techniques in, and out of,

sessions. Clients are active partners in therapy. Given of the role of clients, and the nature of these techniques, the goal is for the clients to become their own therapists.

Classical Conditioning. Classical Conditioning (CC) and extinction of fears involves several stages (Bouton, 2002; Hofmann, 2008). First, a stimulus is paired with an aversive unconditioned stimulus (US) until the first stimulus becomes the conditioned stimulus (CS+; a phase known as classical conditioning). A stimulus which is never paired with the aversive stimulus remains a safe stimulus. The CS+ signals the US and will eventually independently cause the fear response, known as the conditioned response (CR). When exposure to the CS+ happens repeatedly in the absence of the US the CR will discontinue. This process is known as extinction. This does not mean the connection between the CS and US is gone completely, but rather, replaced by a different response pattern based on the new context.

Operant Conditioning. In Operant Conditioning (OC), the strength, frequency, and form of behaviour is influenced by the consequences (Beck & Weishaar, 2014). Reinforcement and punishment are the two forces which influence OC. There are two types of reinforcement: (a) positive reinforcement is when a behaviour is followed by a desired reward and (b) negative reinforcement is when is when a behaviour causes an unwanted stimulus to be removed. There are also two types of punishment: (a) positive punishment is when an aversive stimulus follows the behaviour and (b) negative punishment is when a behaviour is followed by the removal of an desired stimulus. In OC, behaviour is viewed as the result of punishment or reward.

Other concepts relevant to OC (Beck & Weishaar, 2014) include: (a) extinction, (b) discrimination learning, and (c) generalization. *Extinction* is said to be occurring when behaviour ceases to occur because the desired consequence has not occurred as a result. *Discrimination Learning* is said to be occurring when behaviour is reinforced in a certain

situation but not in another situation. This can lead the individual to behave differently in different situations. *Generalization* is said to be said to be occurring when a behaviour occurs in a situation other than the context in which it was learned. Extinction, discrimination learning, and generalization add intricacies to OC.

Two-factor model of fear development and maintenance. Classical conditioning or operant conditioning alone do not explain the maintenance of anxiety responses to conditioned stimuli, thus a two-factor model was developed (Mowrer, 1960). The proponents of this theory posit that fears are developed through classical conditioning and maintained through operant conditioning. Operant behaviours responsible for this maintenance are escape and avoidance. These behaviours allow negative reinforcement (removal of feared stimuli) and therefore the behaviours continue because there is no chance for clients to face prolonged or repeated exposure to the CS in relaxed or safe ways. There are, however, limitations such as difficulty distinguishing between CS and UCS in natural environments. Sometimes *habituation* (gradual reduction of reactivity due to exposure over time) is considered by some to be a better explanation for behavioural improvement than *extinction* (i.e., extinction learning/inhibitory learning; Jaycox, Foa, & Morral, 1998). Some critics go further and suggest emotional processing could improve this model (Foa & Kozak, 1986; Foa & McNally, 1996).

Exposure Therapy Theory. There are two key features of contemporary exposure therapy (ET). The first is that clients need to be engaged with anxiety-causing stimuli repeatedly or for prolonged periods of time (Abramowitz, 2013). After several exposures, responses may decline. The second key feature of ET requires that clients engage in behaviours other than their usual fear responses (Barlow, Allen, & Choate, 2004). These features can be shown in the intervention known as *Systematic Desensitization* (SD).

Systematic desensitization involves exposing clients to progressively more anxiety-provoking stimuli in their imaginations while sustaining relaxed states (Davison, 1968). Starting with muscle relaxation may help them to get into relaxed states as they start systematic desensitization. This process helps clients to use anxiety cues (such as muscle tension or other somatic responses) to know when to use alternative behaviours which are incompatible with anxiety (such as relaxation techniques).

There are many ways exposure therapy can be used. These include: (a) imaginal exposure, (b) *in vivo* exposure, (c) informal exposure, (d) interoceptive exposure, (e) cue exposure, and (f) virtual reality exposure. These types of exposure are explained in the following sections.

Imaginal exposure. Imaginal exposure requires clients to imagine stressful stimuli to create non-threatening associations with feared stimuli (Farmer & Chapman, 2016). This can be used in three different conditions: (a) when *in vivo* (live) exposure is too difficult, (b) when a client's imagination is vivid enough to invoke an emotional response, and (c) before *in vivo* exposure.

Prolonged exposure is a type of imagined exposure where clients recount their traumatic experiences in great detail so they can face events without their traumatic-stress conditioned responses (Farmer and Chapman, 2016). This enables clients to learn new associations with their memories while in safe environments, because the memories are not inherently dangerous (Foa & Rothbaum, 1998).

In vivo exposure. In vivo exposure involves letting clients face anxiety-provoking stimuli in real life (Farmer & Chapman, 2016). This can be done: (a) in a natural environment, (b) at home, or (c) in the therapist's office.

Informal exposure. Informal exposure is when clients are exposed to feared stimuli in

informally during therapy (Farmer & Chapman, 2016). This is most often useful when clients are avoiding certain emotional responses because of maladaptive coping patterns. Therapists typically begin by explaining how exposure will help clients reach their goals. Therapists then describe when and how exposure will be used. Finally, therapists may address exposure as the need arises in following sessions.

Interoceptive exposure. Interoceptive exposure helps clients to engage and recognize their bodily sensations (Farmer & Chapman, 2016). This type of exposure especially helps when clients fear certain sensations, such as those associated with panic attacks. This can include fear of dizziness, in which case clients may spin until they are dizzy and come to realize they no serious consequences will result.

Cue exposure. Cue exposure is primarily used with addiction-based struggles because certain cues can prompt substance use. In the case of cue exposure, the response is blocked in the presence of some cue related to the substance or behaviour. In classical conditioning terms, the conditioned stimulus (e.g., substance-based cue) is presented while restricting the client's ability to engage in the conditioned response (e.g., taking the substance).

Exposure using virtual reality. Virtual reality exposure therapy (VRET) involves facing feared stimuli using technology. VR can be accessed using computers, head-mounted technologies, or even a fully immersive environment (Kim, Rosenthal, Zielinski, & Brady, 2014). The advantages of VR exposure include the ability to: (a) expose clients to situations which may not be possible using *in vivo* exposure, (b) expose clients to stimuli without leaving a therapist's office, and (c) precisely control the stimuli. Promising results have been found in meta-analyses on VR for treatment of various anxiety disorders. VRET treatment groups show greater reductions in anxiety than do wait-list (control condition) groups, and VRET treatment

groups show maintenance of improvements during follow-up periods (Opris et al., 2012). Additionally, VRET treatment groups show larger effect sizes than non-treatment (control) conditions (Powers & Emmelkamp, 2008).

Cognitive Therapy. Cognitive Therapy (CT) is a system of strategies and techniques based in the theory that processing information is very important in survival (Beck & Weishaar, 2014). The main systems involved are: (a) cognitive, (b) behavioural, (c) affective, and (d) motivational. Each of these systems are made up schemas. Cognitive Schemas are what people think of: (a) themselves, (b) others, (c) their goals, (d) their expectations, (e) their memories, (f) their fantasies, and (g) their previous learning. CT views disorders as a result of certain schemas, or biases, when incorporating new information into their lives. There are underlying core beliefs, known as *cognitive vulnerabilities*, which contribute to the development of these schemas. Previously, CT theorists saw cognitive schemas as causative of changes in other systems. Current CT theorists conceptualize all the previously mentioned systems as functioning together and impacting each other; this is known as a *mode*.

Exposure Therapy versus Cognitive Therapy. Ougrin (2011) conducted a meta-analysis comparing Cognitive Therapy (CT) and Exposure therapy (ET) for treating anxiety disorders. Articles chosen were randomized controlled studies comparing the efficacy of CBT and ET for treating Posttraumatic Stress Disorder (PTSD), Obsessive Compulsive Disorder (OCD), Panic Disorder (PD), and Social Phobia (SP). These 20 articles were gathered from Psych INFO, EMBASE, and MEDLINE and included articles from first date available to May 2010. Most interesting to the current study, Ougrin found a statistically significant difference between treatments for SP. CT was more effective than ET in both short term outcomes ($Z = 3.72$, $p = 0.0002$) and long-term outcomes ($Z = 3.28$, $p = 0.001$). Considering the application of trauma

informed research and practice in the current study, the results about PTSD outcomes are also worth noting. There were no significant differences between treatment outcomes for PTSD. A correction to this meta-analysis was published by Ebrahim and Bance (2012) finding some statistical errors in Ougrin's analysis. These authors found a medium effect size for treatment of SP with CT and a modest effect size for ET. Cohen's d criteria used for assessment of effect sizes were: a) 0.2 is a small effect, b) 0.5 is a medium effect, and c) 0.8 is a large effect. Ebrahim and Bance concluded, however, that their assessment did not greatly change the main interpretation of Ougrin's work.

Cognitive Behaviour Therapy. Cognitive therapy is often used in conjunction with behaviour therapy in work with anxiety, thus leading to the new umbrella title Cognitive Behaviour Therapy (CBT). CBT uses strategies to help the client become aware of his or her behaviours, reactions, and thoughts. The focus is upon changing problematic thinking and behaviour patterns (Sheldon, 2011). Psychoeducation is used to help clients become aware of why their specific issues occur and to help them understand how CBT works. The importance of psychoeducation is to draw clients' awareness to how their thoughts, behaviours, and emotions interact (Friedberg & McClure, 2002). Skill building may be used to help the client identify their unhelpful cognitions and learn to challenge those cognitions to make more positive and accurate assessments in their everyday lives (Miller, Short, Garland, & Clark, 2010). Relaxation training is often implemented to help individuals cope with peaks in anxiety (or other symptoms; Barrett, Lowry-Webster, & Turner, 2000). CBT is also used with exposure therapy to help clients face their anxieties (Craske & Barlow, 2007). This combination of cognitive and behavioural interventions is intended to help clients learn to manage their thoughts and behaviours, so they gain more stability and control over their emotions.

CBT is usually a short-term treatment for 10-12 sessions. Because of the short-term nature of the treatment, clients often leave therapy with residual symptoms (Sheldon, 2011). Clients are able to take the tools and techniques learned in therapy into their real life activities. The goal of CBT is to help the client learn techniques to manage their own treatment and therapeutic work after they leave formal therapy. CBT can be done via individual or group therapy sessions.

Cognitive Behaviour Group Therapy meta-analysis. Wersbe, Sijbrandij, and Cuijpers (2013) conducted the first meta-analysis to assess the effectiveness of Cognitive Behaviour Group Therapy (CBGT) on Social Anxiety Disorder (SAD). Eleven studies were gathered from PubMed, Cochrane, PsychINFO, and Embase. Every one of these studies were randomized controlled studies in which the participants were diagnosed with SAD and given CBGT in comparison to a control group. The authors suggest the overall quality of these studies was moderate. The effect size resulting from the meta-analysis suggested a 0.53 (95% COI: 0.33-0.73) difference between the CBGT and control conditions in favour of CBGT. The CBGT condition showed a moderate, yet significant, effect in the treatment of SAD in the meta analysis even though individual studies had effect sizes ranging from 0 (no effect size) to 1 (a large effect size). The authors reported that heterogeneity of values ranged between *low* and *moderately high* within all the analyses. The authors suggest future research be done comparing these group therapies for SAD to control conditions.

Mindfulness- and Acceptance-Based interventions. Mindfulness and Acceptance, while two different concepts, are often used together. *Mindfulness* came from Buddhist tradition while *acceptance* came from Christian teachings (Brown, 1987). The definitions and theories of these concepts are useful to understand more about how these two concepts work individually and can be integrated together in psychotherapy.

Being mindful involves self-regulating your attention to the experiences of the present moment in a non-judgemental, accepting way (Bishop et al., 2004). A well known definition of mindfulness is "the awareness that emerges through paying attention on purpose, in the present moment, and non-judgementally to the unfolding of experience moment to moment" (Kabat-Zinn, 2003, p. 145). Mindfulness involves three main aspects (Shapiro et al., 2006): a) intention, which is a curiosity into what values motivate the practice of mindfulness; b) attention, actively noticing the experiences of the present moment; and c) attitude, which is how one pays attention to the present moment. The main attitudes which should be applied during the attention process are: (a) patience, (b) non-judging, (c) openness, (d) non-striving, (e) trust, (f) acceptance, and (g) "letting go" (Kabat-Zinn, 1990). The Buddhist practice of mindfulness also emphasizes gentleness, loving-kindness, curiosity, and non-reactivity. Mindfulness has the potential to help regulate stress by calming various physiological systems, by allowing a greater connectedness between the mind and body (Schwartz, 1984, 1990). This connection can increase the ability for self-regulation and the ability to restore order to physiological systems, which will improve emotional and physical well being. A mindful way of interacting with the present helps prevent in-the-moment concern over future and past.

Acceptance is considered a way to reach spiritual freedom, by using acceptance to deal with the struggles intrinsic to human life (Brown, 1987). The practice of acceptance allows you to become present and open, to let go of the struggle with painful internal experiences (Brach, 2004). It is worth noting this does not mean one should stay in destructive situations but, rather, by becoming aware of these situations, one can become more capable of leaving such situations (Follette & Hazlett-Stevens, 2016). Acceptance may help clients to deal with what they may become aware of during mindfulness.

Mindfulness Based Interventions: A meta-analysis. A meta-analysis was conducted on the effectiveness of mindfulness-based interventions (MBIs) for treatment of diagnosed Anxiety or Depression (Strauss, Cavanagh, Oliver, & Pettman, 2014). The authors conducted this meta-analysis because they questioned whether standard MBI practices would be of benefit to those who have symptoms meeting diagnostic criteria. Their main four concerns were that: (a) attending to current thoughts and feelings with acceptance may be difficult for those with anxiety (Eaves & Rush, 1984; Strauss, Cavanagh, Oliver, & Pettman, 2014); (b) attending to thoughts and feelings without perseverating on them could be difficult because of the tendency to perseverate on anxious thoughts and feelings (Barnhofer & Crane, 2009; Borkovec, Alcaine, & Behar, 2004; Borkovec & Roemer, 1995; McLaughlin & Hoeksema, 2011; Mogg, Bradley, & Williams, 1995; Muris, Roelofs, Rassin, Franken, & Mayer, 2005; Nolen-Hoeksema, 2000); (c) the concentration and motivational difficulties usually experienced by those struggling with anxiety may make mindfulness a difficult state to achieve (Barnhofer et al. 2009; Eysenck, Derakshan, Santos, & Calvo, 2007; Haslam, Atkinson, Brown, & Haslam, 2005); (d) brief therapy, as is usually the case for MBI, may not be sufficient for treating anxiety. This meta analysis was conducted to discern whether or not the authors' concerns were supported.

Twelve studies on MBIs for anxiety or depression were included with a sample size of 578 participants. The best effects were seen for depressive symptoms but not for anxiety symptoms. There was not statistically significant improvement for those with confirmed anxiety disorders or for anxiety symptoms from the full-range of studies. The authors suggest professionals be careful when using MBIs for clients with anxiety disorders where anxiety symptoms are the target.

Mindfullness- and Acceptance-Based interventions: Meta-analysis. Vollestad, Nielsen,

and Nielsen (2012) conducted a systematic review and meta-analysis into studies using mindfulness- and acceptance-based interventions (MABIs) for participants with Panic Disorder (PD), Social Anxiety Disorder (SAD), and Generalized Anxiety Disorder (GAD). They found 19 eligible studies and conducted a meta-analysis of within-group pre- to post-treatment effects. Their results had Hedges' g effect sizes of 1.08 and 0.85 for anxiety and depression symptoms, respectively. They went further to assess the controlled studies which yielded a Hedges' g of 0.83 for anxiety symptoms and 0.72 for depression symptoms. They assessed and found no significant moderating effects for things such as intervention type, design, treatment dosage, or patient. The authors did note, however, that differing effect sizes warrant adding specific types of psychotherapeutic interventions to mindfulness training. They also found individual therapy to be more advantageous than group therapy. They conclude that MABIs are effective at reducing anxiety symptoms and the associated depressive symptoms.

A more recent study was conducted looking at mindulness- and acceptance-based treatments (MABTs) for Social Anxiety Disorder (SAD) specifically (Norton, Abbott, Norberg, & Hunt, 2014). The authors conducted a systematic review of 9 studies assessing MABTs for SAD in PsychoInfo, Medline, PubMed, and Cochrane Central Register of Controlled Trials. The authors of this review found significant improvements in symptoms as a result of treatment with MABTs but the benefits were equal to, or less than, the benefits from Cognitive Behavioural Therapy (CBT). The authors of this review note that some of the studies had methodological weaknesses and risks of bias, while others were uncontrolled or had small sample sizes. While there are indications that MABTs can reduce SAD symptoms, the outcomes should be accepted and applied with caution until future research can be done.

Trauma Informed Treatment for Social Anxiety Disorder

Thus far, the treatments reviewed in this chapter have included (a) cognitive, (b) behavioural, (c) current physiological calming, and (d) acceptance based aspects of SAD. At first glance this seems like a thorough approach to treatment. There are, however, still aspects which may not be addressed by those treatments.

Erwin et al. (2006) studied responses to very stressful social situations, of 45 participants with Social Anxiety Disorder (SAD). Those individuals had experiences which did not meet the criteria for posttraumatic stress disorder (PTSD) according to the DSM-IV. The researchers were particularly interested in the occurrence of symptoms usually associated with PTSD, such as the frequency of avoidance, re-experiencing, and hyperarousal. Such responses were found to be very common. Over one third of the sample would be diagnosed with PTSD if their traumatic events had met the criteria in the DSM-IV. A total of 94% of those participants reported that their symptoms had occurred for more than 3 months. Results of studies have shown that social interaction and public speaking are often associated with elevated systolic blood pressure (Turner, Beidel, & Larkin, 1986) and increased heart rate (Ost, Jerremalm, & Johansson, 1981) but Erwin et al. (2006) suggested that hyperarousal symptoms, such as those for PTSD Criterion D (irritability, sleep difficulties, hypervigilance, concentration difficulties, and exaggerated startle response) were the more extensive, and potentially impairing, symptoms. The authors explained the combination of emotional and cognitive avoidance responses to memories of these socially traumatic events. Results of this study suggest that memories of these *past* traumatic events impacted those with SAD as much as *current* or *anticipated future* performances or social situations. The vividness of these social memories suggests that they are pervasive, even though they are in the past, much like other traumatic memories. As a result, the authors suggest that

treatments for PTSD should be used to treat SAD. They endorse cognitive-behavioural and exposure treatments, but question whether these treatments can access all aspects of fear memories.

Wild et al. (2008) did a study to check the effectiveness of re-scripting early memories of unpleasant social experiences. This was an early study (n = 11), with two sessions given a week apart. The first, a control session, involved discussion of participants' memories and images without modification. The next was an experimental session, with cognitive restructuring and an imagery re-scripting procedure intended to update and conceptualize memories. No changes were found for the control session but the experimental session caused improvements in: (a) negative beliefs; (b) fears of negative evaluation; (c) levels of image/memory distress and vividness; and (d) social anxiety. The authors suggested that re-scripting these unpleasant social memories (associated with negative self-images) could help in the treatment of social phobias. The results of these studies reveal how SAD can have symptoms similar to those associated with trauma, and suggest that treatment of those social traumas could be treated successfully with trauma therapies.

These traumatic ties to anxiety bring a fundamental psychological concept to mind; this concept is transference. Transference is described as the "experience of impulses, feelings, fantasies, attitudes, and defenses with respect to a person in the present which do not appropriately fit that person but are a repetition of responses originating in regard to significant persons of early childhood, unconsciously displaced onto persons in the present" (Greenson & Wexler, 1969, p. 28). These transference experiences can cause substantial difficulty in interpersonal relationships (Wolitzky, 2011). Since past experiences can trigger negative transference reactions, individuals with public speaking anxiety may experience such

transference reactions with those listening to them speak (i.e., audience members).

A study by Wieser, Pauli, Reicherts, and Mühlberger (2010) assessed neurological activity in anticipation of a public speech. The researchers found larger N170 amplitudes on electroencephalogram assessments when participants saw angry faces, and smaller N170 amplitudes when they saw happy or neutral faces. They used early posterior negativity to check for motivated attention, and found motivated attention to be higher when participants viewed angry faces as opposed to happy or neutral faces for those in a public speaking group. They concluded that public speaking fears can change the way participants process faces, particularly angry faces. This heightened negative response to angry faces could be an aspect of transference associated with disturbing past experiences.

Each of these studies contributes possible extensions beyond standard anxiety research protocols, including (a) broader traumatic criteria, (b) processing of past traumatic social experiences, and (c) negative transference reactions. These ties to traumatic antecedents of anxiety constitute reasons to consider current treatments for trauma and their potential for helping those who struggle with performance-specific SAD.

Current Trauma Treatments

A trauma informed approach to treating SAD requires examination of current trauma treatment efficacy. Many treatments are used to treat trauma but few are especially designed to work with the underlying sources of traumatic symptoms. Some of these treatments are: (a) Exposure Therapies, (b) EMDR, (c) CBT, and (d) Present-Centered Therapies (PCT). The following literature reviews are meta-analyses of the aforementioned treatments for treating trauma. The first is a review of a complex study comparing trauma treatments to the other types of treatments. Next is a meta-analysis of Trauma Focused Exposure Therapy followed by a

meta-analysis examining the effectiveness of EMDR. Each of these reviews will provide more context for the current treatments for trauma.

Comparison of treatments used to treat trauma. Tran and Gregor (2016) conducted a meta-analysis comparing several bona fide psychotherapies for treatment of Post-Traumatic Stress Disorder (PTSD). The authors defined "bona fide" treatments as those which met the following criteria: (a) administered by a trained therapist who considered the therapeutic relationship when adjusting the treatment, (b) administered face-to-face, and (c) satisfying criteria provided by the author, as follows. Treatment descriptions in each study needed to meet two of four set criteria: (a) references to the theoretical approach used, (b) description of psychological processes, (c) references to treatment manuals, and (d) descriptions and references to the active ingredients of the treatments. The authors conducted this analysis because previous analyses had suggested Exposure Therapies (ET), Cognitive Behaviour Therapies (CBT), trauma focused Cognitive Behavioural Therpaies (TFCBT), and Eye Movement Desensitization Reprocessing (EMDR), are of similar effectiveness while non-trauma focused therapies (i.e. hypnotherapy, psychodynamic therapy, or supportive therapy) showed inconsistent results (11-21). Eligibility criteria included: (a) randomized controlled trials (RCTs), (b) comparisons of at least two bona fide therapies, (c) treatments doses lasting at least two sessions, (d) adult participants, (e) PTSD diagnoses based on the DSM criteria at the time of each study (DSM-III and DSM-IV for the studies included), and (f) severity of the symptoms assessed with either a clinical rating or self-report. They found 22 randomized control trials with a total of 1,694 patients.

Treatments included in this study included: (a) Exposure Therapies, (b) Prolonged Exposure, (c) combined Exposure and Prolonged Exposure Therapies, (d) EMDR, (e) CBT, and

(f) Present-Centered Therapies (PCT). The PCT interventions included such treatments as Rogerian client centered work like (a) present-centered, (b) psychoeducative, and (c) problem solving. CBT clinicians were permitted to use, but not to depend on, certain techniques from other therapies. Treatments were coded as (a) trauma-focused (TF), or (b) not-trauma-focused (NTF). TF treatment were required to focus specifically on traumatic event memories and subsequent appraisals.

Results of the studies were analyzed to see which therapies were most efficacious for treatment of PTSD. Treatments showed similar results in clinical significance and dropout rates. The treatments which focused on trauma did show greater efficacy than those which were NTF but this result did not quite reach significance ($p = .095$). The TF treatments did appear more effective when working with PTSD symptom severity at post-treatment, and at first and second follow-ups. Similar efficacy was found for (a) exposure therapies, (b) prolonged exposure, (c) CBT, and (d) TFCBT. The authors did note, however, that these results could be due to low quality studies being included in the analysis. When they excluded the studies which seemed to be a low quality the prolonged exposure and exposure therapies showed an advantage in treatment of PTSD symptoms at the post-treatment assessment. The results showed that PCTs were slightly less helpful for PTSD symptom severity at the post-treatment and follow-up assessments. These results showed that many of these bona fide treatments had similar efficacy but, when studies with a questionable quality were removed, exposure and prolonged exposure had a stronger impact on PTSD symptoms.

Trauma focused Exposure Therapy. Modern technology has provided new ways to treat Post-Traumatic Stress Disorder (PTSD). Of these new technological resources, Virtual Reality has become very applicable to exposure therapy. Some meta-analyses have compared the use of

traditional exposure therapy and virtual reality exposure therapy. The following review is a meta-analysis to address this comparison.

DiMauro (2014) conducted a meta-analysis which compared the effectiveness of traditional cognitive-behaviour-based exposure therapy versus virtual reality exposure therapy (VRET) for treatment of PTSD. In this meta-analysis, the authors compared pre- and post-treatment effect sizes and interactions across 26 articles. Article inclusion criteria included: (a) aged at least 18 years and diagnosed with PTSD, (b) standardized diagnostic measures (e.g., Clinician-Administered PTSD Scale, Symptom Scale-Interview, or Posttraumatic Diagnostic Scale), (c) treatments provided face-to-face (rather than online or over the phone), and (d) distinct treatment groups. Articles were selected from PsychArticles and Psychinfo. The first set of articles included 15 articles on traditional therapies for PTSD and were found using key words of "Post-traumatic Stress Disorder," "Posttraumatic Stress Disorder," or "PTSD," paired with the words "exposure therapy," "In Vivo exposure," "prolonged exposure," "imagined exposure," and "flooding." The second set of 6 articles was regarding VRET. Search words included "Posttraumatic Stress Disorder," "Post-traumatic Stress Disorder," or "PTSD" along with "Virtual Reality." The results were insignificant, though showing a trend towards significance ($p < .05$), with findings supporting traditional exposure therapy over VRET. The authors suggest that a larger database of studies may have rendered significant results.

Eye Movement Desensitization and Reprocessing. Davidson and Parker (2001) conducted a meta-analysis comparing Eye Movement Desensitization and Reprocessing (EMDR) with other therapies. The researchers collected 34 studies from various databases over select years: (a) Medline and PsychINFO from 1988 to April 2000; and (b) Current Contents from 1997 to March 2000. Keywords used in these searches were *EMDR* and *eye movement*

desensitization and reprocessing. The focus of this meta-analysis was to compare participants across conditions: (a) participants treated with EMDR; (b) participants treated with treatments other than EMRR; and (c) participants who did not receive treatment. They broke these conditions down into seven categories with the first being a within-subjects comparison between pre-post EMDR assessment scores. The remaining six categories compared EMDR to: (a) no treatment, (b) Cognitive Behaviour Therapy or *in vivo* exposure, (c) exposure (without *in vivo*), (d) eyes fixed desensitization reprocessing (EFixDR, in which the eye moment aspect of EMDR is left out of the EMDR treatment protocol), and (e) other dismantling designs (OthDism, when the EMDR protocol was used with the omission of one specific aspect while eye movement was used), (f) nonspecific treatments (e.g., biofeedback, active listening, applied relaxation, but no therapies in which anxiety provoking stimuli were presented). The results of analysis showed EMDR was effective when: (a) post-treatment EMDR group assessment results were compared to pre-treatment EMDR group (within-participant comparisons), and (b) when EMDR post-treatment measure was compared with untreated controls. EMDR was not, however, shown to be more effective than exposure therapies, EFixDR, or OthDism. This meta-analysis suggests: (a) EMDR is effective in treating trauma but that the exact protocol may be unnecessary; and (b) EMDR may not be more effective than other uses of exposure.

Alternative Treatments Used in This Study

Two treatments with different approaches were used in this study to treat performance-specific SAD. The first treatment, Observed and Experiential Integration, addressed the underlying traumatic experiences of SAD, borrowing from a variety of theories to develop a holistic approach. The second treatment was a grounding and relaxation protocol, known as BRAIN, which addressed immediate coping with trauma symptoms present in performance-

specific SAD. The logic for using these two types of treatments was to compare the treatment of underlying trauma (trauma-root-focused treatment) with the treatment of current trauma symptoms (symptom-focused treatment).

OEI and BRAIN were chosen for this study because they work *with* the neurobiological correlates of anxiety and trauma found in the fight-and-flight response (Porges, 2007). As seen in this literature review, many types of treatment used for anxiety interact with this group of symptoms as behavioural or cognitive, which does not necessary draw upon the insights from trauma therapy. OEI and BRAIN interact with deeper level emotional responses and therefore work *with* the body's natural response to fear (activated by the limbic system) instead of trying to work against the natural fear response. A cognitive or behavioural approach is more likely to try to override the natural fear response by struggling to regain cognitive control (reengaging the cortex of the brain) without calming the limbic system. OEI and BRAIN engage with the the client based on what their brain is doing in the moment and allow for dissipation of the fear response so the cortex is emotionally safe to reengage.

See Appendix B for a diagram of how the polyvagal theory of fear response occurs and to Appendix C and Appendix D to see how OEI and BRAIN interact with this fear response. It is worth noting that it is very hard to act in a cognitive way after the ventral vagal break is off and even harder once the freeze response has occurred. It is even difficult to use the BRAIN techniques after the freeze response has occurred but there are several OEI techniques which can still be applied at that point. These diagrams show how these different techniques are able to engage with the various stages of fear response.

Observed and Experiential Integration

In the previous sections, mainstream treatments for public speaking anxiety were

reviewed. In contrast, this section constitutes a theoretical and technical review of a treatment that has never before been used to treat performance-specific SAD in a formal study. Observed and Experiential Integration (OEI) was selected as one of the two treatments used in this study because it has been shown to reduce trauma-related anxiety symptoms (Bradshaw, McDonald, Grace, Detwiler, & Austin, 2014). In light of those research findings, it was postulated that OEI would also help to process posttraumatic aspects of social anxieties, as mentioned previously (Erwin et al., 2006; Wild et al., 2008). OEI has been used in hundreds of thousands of hours of clinical practice over a period of 21 years (R. A. Bradshaw, personal communication, June 15, 2015). Within these hours, OEI has been used to successfully treat public speaking anxiety, usually in 1-3 sessions. To follow up these promising clinical observations, this study constitutes the first formal investigation of OEI to treat performance-specific SAD, using short term treatment (7 sessions). In this section, the theoretical background and development of OEI are outlined. In addition, OEI techniques are reviewed, along with studies in which OEI has been used as a trauma treatment.

Theoretical background. OEI is a theoretically integrated treatment. Gold and Stricker (2006) described several types of integration: (a) Assimilative Integration, (b) Technical Eclecticism, (c) Common Factors, and (d) Theoretical Integration. In this section readers will also learn how each of these types of integration was used in the development of OEI.

Furthermore, Bradshaw has compiled a description of OEI through other theoretical lenses. The main theoretical lenses he has summarized are combinations of Behavioural/Neurobiological and Psychoanalytic/Psychodynamic. Many treatments are presented through their own theoretical lenses with little regard to what they are missing from other ways of approaching the presenting problem. In this summary, Bradshaw explains how

OEI addresses many of the mechanisms of change described by Behavioural, Neurobiological, Psychoanalytic, and Psychodynamic theorists. OEI encompasses most of the mechanisms inherent in therapies discussed earlier in this document. This summary can be seen in Appendix E.

Assimilative integration. At the heart of OEI is Experiential Psychotherapy (Bradshaw et al., 2011). This aspect is closely related to Accelerated Experiential Dynamic Psychotherapy (Fosha, 2002). The Therapist is constantly tuning into clients' expressions on a second-by-second basis, while giving them directives according to OEI theory. The client is also practicing Focusing (Gendlin, 1984), by paying attention to slight affective and somatic states and shifts, while following the therapist's directions. Focusing is at the foundation of OEI, from an experiential perspective.

Relational Psychoanalytic Therapy is then applied, as each therapist interacts with micro-level expressions of clients, which are contingent on eye movements and facial expressions clients have during treatment. This micro-level process is combined with empathic reflections from therapists, across sessions. As these comments coincide with experiences of clients, each therapist is able to join with his or her client and build relationships of understanding (Bradshaw et al., 2011).

Negative reactions to the faces of therapists were noted during the development of OEI Switching (i.e., alternate left and right monocular covering). This reaction constitutes negative transference. Distortions clear as clients "switch" (Bradshaw et al., 2011).

There are some similarities in the neurobiological aspects of OEI and Schiffer's Dual Brain Psychology (Schiffer, 1998). He noticed differences in emotional states when light was blocked from both eyes with the exception of the right or left lateral visual fields. He described these

shifts as either "irrational" (similar to the id) or "rational" (similar to the ego). Similarly, OEI involves alternate monocular covering. This technique, in combination with several others described in the OEI Techniques section of this document, "neurologically activates, dissipates, and shifts perceptions through repeated applications" (Bradshaw et al., 2011, p. 111).

Technical eclecticism. Some techniques were integrated without adoption of underlying theories. One of these techniques, guided eye movements and bilateral stimulation (both auditory and tactile) resulted in Glitch Massaging techniques (Bradshaw et al., 2011). Another technique borrowed without theoretical acceptance is 'lazy eights' from Educational Kinesiology (Brain Gym; Dennison & Dennison, 1986, 1994). This technique was adapted, to become the OEI technique known as "Sweeping", which is only used for resolving somatic symptoms such as drowsiness, headaches, tingling, dizziness, numbing, and visual disturbances (Bradshaw et al., 2011). A third technique involves use of a balance board, to help counteract loss of balance associated with dissociation, by providing instant feedback to clients that they are "tuning out".

Common factors approach. Common factors across many effective psychotherapies are incorporated into OEI, which contribute to the effectiveness of this treatment. These include: empathic attunement, insight, self-awareness, and hope. The most important of these factors is empathic attunement. In agreement with Greenberg (2008), OEI therapists believe the use of emotion is also very important. OEI involves use of empirically-supported, emotion-focused change processes. All five of Greenberg's principles of change in the affective domain are incorporated in OEI: "Increasing emotional awareness, facilitating emotional expression, improving emotion regulation, promoting greater reflection on emotion, and transforming emotion with the activation or presentation of alternate emotion(s)" (Bradshaw et al., 2011, p. 115).

Theoretical integration. When a trauma response is triggered, blood flow to the left dorsolateral prefrontal cortex is reduced, causing difficulty in coherent and clear speech (Rauch et al., 1996). Other symptoms of trauma, such as dissociative experiences, panic attacks, and flashbacks, are not accessed easily through words because they emanate from subcortical areas of the brain (limbic and paralimbic regions; see van der Kolk, 2002). Along with these neurobiological principles, other theoretical mechanisms have been included in OEI to address neurobiological and behavioural aspects of clients' experiences.

Neuro-activation and microattunement during trauma processing. During OEI treatment, mirror neurons are activated in therapists and they experience the emotions of their clients to a limited extent (known as "embodied simulation"). Gallese, Eagle, and Migone (2007) suggest that this experience helps clients to see their emotions in the faces of their therapists and, in turn, to "experience the modulation and containment of such states" (p. 160). If therapists notice and comment on the slightest movements in the eyes and facial expressions of clients while they are experiencing emotional changes, those clients will feel more connected with their therapists. This attunement helps each client develop secure attachment with his or her therapist.

Classical Conditioning of sensory, emotional, and cognitive responses. Classical conditioning can occur with sensory stimuli such as sights, smells, somatic sensations, tastes, and sounds to amygdalar and hypothalamic-pituitary-adrenal (HPA) axis activation (van der Kolk, 2001; Yehuda, 1997, 2002). People are triggered by both external discriminative stimuli, and internal cues like racing heartbeat, shortness of breath, and lightheadedness caused by amygdaloid arousal (Barlow, Allen, & Basden, 2007). OEI does not rely exclusively (or even primarily) on exposure to extinction. Treatment involves having clients use the OEI technique of

Switching, during which they expose the eye associated with the most somatoaffective intensity to light, for one to five seconds (to as short a duration as half a second in extremely intense cases). By these means, intensity can be dissipated by Switching (alternately covering the eyes). Neuro-activation and microattunement (NAMA) are considered the primary processes of change in OEI (Bradshaw et al., 2014).

Incorporation of polyvagal theory. All three levels of human response (according to polyvagal theory; Porges, 2007) are addressed in OEI (Bradshaw et al., 2011). According to this theory, humans respond in a hierarchy of three levels of neurobiological activation. The top level (referred to as "Social Engagement") involves the ventral vagal complex when it is not adrenalized (i.e., when the "brake" is "on"). In this state, the larynx, pharynx, bronchi, lungs, esophagus, and heart) are relaxed. The next level of response involves activation of the sympathetic branch of the autonomic nervous system (also known as the "fight or flight" response). When the ventral vagal "brake" is "off", these structures are adrenalized. Finally, in the third level of response, if the "fight or flight" response cannot sufficiently dissipate a threat, the Dorsal Vagal Complex ("freeze" response) is activated. This involves organs below the diaphragm (e.g., stomach and intestines) but also restricts bronchi, lungs, and airway, and slows the heart. This final response is often triggered by hypoxia or perceived lack of oxygen.

Porges (2007) describes implications of polyvagal theory for psychotherapy. This theory is relevant for clinical practice with OEI. He posits that, in order to shift clients from defensive responses (e.g., dorsal vagal and ventral vagal "brake off" states) back to the relaxed state of social engagement (ventral vagal, "brake on"), the nervous system must (a) assess risk, and (b) inhibit primal limbic system structures which manage fight, flight, and freeze behaviours. In individuals with extensive histories of psychological trauma (abuse and neglect), threat is over-

generalized. By this means, their neuroception (unconscious assessment of safety or threat) is distorted. During the neuroception process, feature detectors within the temporal cortex are activated (which recognize familiar faces, voices, and hand movements). Depending on these assessments, limbic activity is either enhanced (threat) or suppressed (safety). In most cases, the nervous system is able to evaluate risk (neuroception) and causes appropriate neurophysiological responses for the context. Safe situations result in relaxed limbic structures, allowing calm states and social engagement. If, however, the environment is mismatched with nervous system appraisals, individuals may engage in fight, flight, or freeze responses, making social engagement and communication extremely difficult. There are OEI techniques to address all three levels postulated in polyvagal theory, and distorted perceptions can be corrected with OEI.

Coactivation of sympathetic and parasympathetic responses, and tonic immobility. Rothschild (2006) recognized polyvagal theory but suggested that the "freeze" response triggered during trauma processing was more likely due to coactivation of sympathetic and parasympathetic branches of the autonomic nervous system. She posited that coactivation could explain why some clients experience hyperarousal and numbing at the same time. OEI treatment permits clients to achieve release from such states, not only in sessions but between sessions.

Ocular proprioception, multisensory memory, and stimulated psychophysiological schemas. Intricate information about the movements and locations of the eyes, relaxation or constriction of the intraocular muscles, and positions of the eyelids is sent to the brain by large numbers of proprioceptive neutrons in extra- and intra-ocular muscles (Batini, Buisseret, Lasserre, & Toupet, 1985; Donaldson, 2000; Dutton, 2003). Specialized ocular muscle components ("multiply innervated muscle fibers") have palisade endings, implying they employ proprioception to control slow, gradual movements and contractions (Buttner-Ennever, 2006,

2008). The Glitch Massage technique in OEI involves noting the types and speeds of eye responses (Bradshaw et al., 2011). There are several intra-ocular muscles: those which control the thickness and curvature of the lenses, and those which dilate and constrict the pupils (Buttner-Ennever, 2006, 2008). The last group of muscles involved are the extra-ocular muscles which move the eyelids, known as levator palpebrae superioris. All of these muscles and neurons work together to make movement-related associations.

According to OEI theory, specific movement patterns and distances (of objects) from the eyes, and resultant eye movement and lens focusing, can become classically conditioned to specific amygdalar states and HPA axis arousal (Bradshaw et al., 2011). Specific eye positions can be accessed while clients relive (i.e., somatoaffectively recall) events with which they are associated. This can be done intentionally, using multisensory imaginal visualization. By guiding a client's eye(s) into and through points which have been conditioned to traumatic events, symptoms of intensity or numbing can be dissolved. Often, simply having a client cover his or her dominant eye can reduce intensity (or at least change the emotion) and this difference is profound and observable enough to engage the client in the process.

Observed and Experiential Integration techniques. In this section the five main techniques of OEI will be described (Bradshaw et al., 2011). The main techniques are: (a) Switching, (b) Tracking and Massaging glitches, (c) Sweeping, (d) Glitch Holding with Bilateral Stimulation, and (e) Release Points.

Switching. Switching involves alternate monocular covering of the left and right eyes while thinking of distressing memories or disturbing symptoms. This technique can be used for (a) titrating intensity associated with traumas, (b) reducing dissociative artefacts (e.g., loss of balance, dizziness, drowsiness, visual distortions, or headaches), and (c) detecting and resolving

negative transference reactions.

Tracking for glitches and Glitch Massaging. While tracking for glitches, clients think about traumatic memories or disturbing symptoms and track a stimulus (such as a therapist's fingers) across one or both visual fields. When hesitations, blinking, or skipping (i.e., "glitches") are seen in eye movements, the therapist "massages" them by guiding one or both eyes back and forth or toward and away from the eyes until they move smoothly and emotions are dissipated.

Sweeping. The Sweeping technique is a combination of Switching and Tracking, used to reduce dissociative artefacts (headaches, visual distortions or occlusions, drowsiness, etc.).

Glitch Holding with Bilateral Stimulation. Glitch Holding with Bilateral Stimulation is useful for resolving "visual splitting" (i.e., when one eye seems focused on a stimulus while the other "wanders"). The therapist holds the client's eyes in the "glitch" (usually in the upper visual fields) while the client engages in rapid alternate tapping of his or her left and right shoulders.

Release points. Knowing that there was a "most intense point" in the "most intense" eye (i.e., a glitch in the dominant eye), Bradshaw looked for (and found) the "least intense point" in the "least intense" (non-dominant) eye: a "peaceful spot" in the non-dominant visual field. These points have now been identified, and are used to help release core trauma symptoms such as throat constriction, nausea, and bronchoconstriction.

Observed and Experiential Integration research. Bradshaw et al. (2017) completed an 18-month randomized clinical trial with 25 female sexual assault survivors who had developed posttraumatic stress disorder (PTSD). Three treatments were used: (a) Cognitive Processing Therapy (CPT-R), a therapy involving cognitive restructuring and behavioural exposure; (b) OEI; and (c) a control treatment comprised of calming and grounding techniques, known by the

acronym BRAIN (Breathing, Relaxation, Autogenics, Imagery, and grouNding). Several types of measurements were used at pre-treatment, post-treatment, 3-month follow-up, 6-month follow-up and final time periods: (a) quantitative, (b) qualitative, and (c) psychophysiological assessments. Assessors were blind to group assignments (treatment conditions), and participants were randomly assigned to one of the three groups. All three groups showed significant reductions in PTSD symptom severity between pre-treatment and post-treatment assessments. Significant differences between the groups were found at the 3-month follow-up, at which time, OEI was more effective than BRAIN. All groups showed increases in PTSD symptoms at the 6-month follow-up, likely a result of having no treatment for 6 months, other than calming and grounding techniques. There was then a cross-over for a second round of treatments. Once again, significant improvements were found equally among the groups. At the final assessment, 75% of the participants reported that OEI was most effective for reducing their PTSD symptoms. In addition, many participants reported that CPT was helpful for reducing self-blame, shame, and guilt. The authors surmised that OEI was at least as helpful as CPT, and that all three treatments were effective for treating PTSD symptoms.

Bradshaw, McDonald, Grace, Detwiler, and Austin (2014) conducted a pilot study comparing OEI to a delayed treatment control. The Clinician-Administered PTSD Scale (CAPS) and the Impact of Event Scale-Revised (IES-R) were used as dependent measures. Script-driven symptom provocation was used to activate symptoms for assessment purposes. Ten participants diagnosed with PTSD (3 male, 7 female) received three 1-hour sessions of OEI “Switching”. Participants in the OEI treatment group showed greater improvement than those in the control group in terms of reduction of PTSD symptoms. The delayed treatment group later received the same treatment. Nine of the ten participants no longer met the criteria for PTSD at the end of the

study. This RCT portion of this study was later supplemented by a qualitative 2-year follow up. The follow-up included 8 of the 10 original participants and all participants reported that OEI treatment was important in their paths to recovery. Several participants clearly described details of how OEI helped their individual recoveries.

BRAIN

BRAIN (Breathing, Relaxation, Autogenics, Imagery, and grouNding) was the alternative treatment used in this study because relaxation techniques have been found to be helpful for coping with trauma symptoms (Taylor et al., 2003), even though previous research findings have not indicated major impact of relaxation techniques on SAD with the performance only specifier (Alstrom et al., 1984; Wolpe, 1995). Much of the research on relaxation and PSA did not involve either mindfulness or grounding techniques. BRAIN protocol was chosen to represent relaxation and grounding treatments because this collection of techniques is particularly robust and has been found to be effective for reducing posttraumatic stress symptoms (Bradshaw et al., 2017). The range of procedures included in BRAIN address both physiological and cognitive aspects of psychological trauma.

BRAIN techniques. Descriptions of the main techniques in the BRAIN protocol are provided in the following sections. The techniques (which are represented by the acronym BRAIN) are: Breathing, Relaxation, Autogenics, Imagery, and grouNding.

Diaphragmatic breathing. "Belly breathing" shifts respiration out of the chest to the diaphragm and the abdominal muscles, thereby deepening and lengthening the breath. This prevents hyperventilation, shortness of breath, breath-holding, and fainting. Participants are instructed to: (a) place one hand on their abdomens and the other on their chests, (b) close their eyes and breath in through their noses, and (c) notice how much more their abdominal hands rise

than their chest hands. Participants do this for 5-10 minutes at a time. "Sighing" when exhaling increases relaxation. Self-statements such as "Breath in relaxation" and "Breath out tension" while inhaling and exhaling facilitate deeper states of relaxation. The diaphragm creates a vacuum in the lungs, pulling in more oxygen than thoracic breathing that involves raising the shoulders and expanding the ribcage.

Progressive muscular relaxation. Muscle tension increases in response to traumatic experiences. Such tension can be triggered situationally or remain more constant. Increased awareness of the difference between relaxed and tense muscles helps participants recognize when they are becoming distressed and need to apply relaxation techniques. Progressive muscular relaxation involves guiding participants through major muscle groups, requiring them to tense muscles for 5-7 seconds, and then release the tension for 20-30 seconds (only the relaxation component is used once participants can differentiate tense from relaxed muscles. Major muscle groups include: (a) hands, forearms, and biceps; (b) head, face, throat, and shoulders; (c) chest, stomach, and lower back; and (d) thighs, buttocks, calves, and feet. These techniques require practice to consistently reduce muscle tension, and pair relaxation with exhalation.

Autogenics. This set of mental suggestions helps participants relax their bodies, by activating the *parasympathetic* division of the autonomic nervous system (ANS). The ANS controls smooth muscles, which include internal organs, arteries, veins, and capillaries. The *sympathetic* branch of the ANS becomes more active after traumatic experiences, to maintain vigilance (i.e., the "fight or flight" response). Autogenics activates the opposite branch (i.e., the parasympathetic or "relaxation" division) of the ANS.

Autogenics involve slow, relaxed, respiratory-synchronized self-talk. The five statements

are: (a) “My breathing is deep and slow”, (b) “My heartbeat is slow and regular”, (c) “My hands and arms are warm and heavy”, (d) “My feet and legs are warm and heavy”, and (e) “My forehead is cool and dry”. This self-talk activates vasodilation (i.e., expansion of blood vessels), in the extremities, making hands, arms, feet, and legs feel warm and heavy.

Imagery. Positive multisensory moving imagery helps participants to replace distressing images in their minds with calming pictures. This involves vividly recalling relaxing, safe places, usually in nature (e.g., a tropical beach, garden, lake, river, forest, mountain, or country road). Many find it helpful to imagine protection around the setting to keep it safe (e.g., high rock cliffs, a patrolling lion, a large Plexiglas dome, etc.). Such imagery is combined with abdominal breathing, progressive muscular relaxation, and autogenics. Typical prompts include statements that encourage participants to engage their sensory memories, such as: (a) “Notice what you see…”; (b) “What do you hear…”, (c) “Pay attention to what you feel in your body…”, (d) “Become aware of what you smell…”, and (e) “Imagine your favourite taste…”. The easiest combination of techniques to practice together is imagery with autogenics: “As each wave rolls in on the shore, it is perfectly timed with your breathing (exhaling). The sun warms your hands and arms, feet and legs; Your hands and arms are *so* warm, and *so* heavy. There is a gentle breeze with a beautiful fragrance, blowing over your forehead and through your hair; Your forehead is cool and dry…”

Grounding. Grounding helps to reconnect participants to their immediate experiences (rather than regretting the past or fearing the future). Those with past traumas often focus on past concerns, and worries about the future. The goal of grounding is to help clients be more in-the-moment. This practice should be applied several times a day. There are several ways to increase grounding, described in the following paragraphs. These techniques include: (a) sensate

focus, (b) Cook's Hookups, and (c) Cross Crawl.

Sensate focus. During this exercise, participants become more aware of their senses. Focusing on them, one at a time, increases their ability to therapeutically dissociate from anxiety-inducing past or future events. These exercises should be done for 12-15 minutes a day to allow sufficient time for participants to tune in to their bodies, one sense at a time.

Hearing – Participants are guided to focus on sounds in the room. They may be encouraged to close their eyes or look down at the floor, and focus only on what they hear. The goal is to note what is happening in the moment and not worry about the future or the past.

Seeing – Participants are guided to notice what they can see around the room (or in nature, if they are outside). The instruction is to find and focus upon colours, objects, pictures, or people that are most comforting.

Touching – Participants are encouraged to touch different textures near to where they are sitting or standing, to draw their attention to the current moment. Noticing the comfort of a chair cushion, the coolness of a metal table, or the firmness of the ground can provide distraction at the least, and comfort (fur, feathers, fabric) at best.

Tasting – Most participants find that this sense is helpful for distracting them from states of distress. Carrying and using gum, favourite candies, or snacks when anxious, facilitates therapeutic dissociation. Participants are instructed to take several minutes to notice various aspects of taste and texture, to draw their attention away from distressing thoughts or emotions.

Smelling – This sense is closely associated with emotions due to the anatomical proximity of the olfactory bulbs (projecting back from the nose) to the left and right amygdalae (in the limbic system, within the midbrain). This is why smells facilitate immediate recall of emotions (both negative "triggers", and positive "reminders"). Participants are encouraged to

take note of what smells prompt calm, peaceful, or positively energizing emotions. Typically, scented oils come in four broad categories: florals, woods, spices, and citrus fragrances.

Cook's Hookups. The left brain hemisphere controls the right side of the body, and the right brain hemisphere controls the left side of the body. This fact is the basis for two additional grounding techniques that are included in the BRAIN protocol. A left-right imbalance in affective arousal can causes numb ("stuck") or aroused ("stirred up") states. These exercises involve crossing the arms and legs. In Cooks Hookups, participants are instructed to sit in chairs with their legs crossed (one perpendicular to the other, resting the top leg across the lower thigh of the other one). At the same time, they are instructed to cross their arms just above the wrist (and rest their hands on the top leg at mid-calf).

Cross-crawl. Participants are instructed to touch their left hands (or elbows) to their right calves (or knees), and then repeat the process on the other side, while standing or sitting (lifting knees when standing). This facilitates hemispheric integration, and tactile reconnection to the present moment. When participants dissociate they lose connections to body awareness in space, losing their balance. During cross-crawl, participants are forced to stay connected while balancing on one leg at a time (alternating sides). In addition, the elements of touch and sound that occur when hands contact legs facilitate in-the-moment body awareness.

Relaxation Treatment research. Taylor et al. (2003) conducted a study comparing Exposure Therapy, Eye Movement Desensitization and Reprocessing (EMDR), and Relaxation Treatment to treat posttraumatic stress disorder (PTSD). These treatments resulted in similar outcomes in terms of: (a) symptom reduction, (b) symptom severity, and (c) impact on hyperarousal or numbing symptoms. Relaxation and Exposure therapies showed stronger results than EMDR as evidenced by: (a) larger reductions in re-experiencing and avoidance, (b) faster

improvements, and (c) greater numbers of participants who no longer met the diagnostic criteria for PTSD. In addition, in a study of women with PTSD as a result of sexual assault(s), Bradshaw et al. (2017) reported that administration of the BRAIN protocol resulted in equivalent reductions in PTSD symptoms to OEI and Cognitive Processing Therapy (CPT-R) from Pre- to Post-Treatment assessments (although results for BRAIN faded by the 3-month follow-up, while results for OEI and CPT-R were not only sustained but improved). In light of these positive findings regarding application of BRAIN (or other Relaxation Skill Treatment) protocol, this collection of techniques was chosen as the alternative treatment for the present study. It was hoped that the BRAIN protocol would reduce SAD social trauma symptoms as well.

Summary

Performance-specific SAD is very common and can disrupt the desired futures of those who struggle with this specific phobia. Many treatments have been used but few of those treat psychophysiological hyperarousal caused by past traumatic social experiences. The treatments applied in this study address the commonly missed aspect of trauma in anxiety. BRAIN focuses on the surface trauma symptoms and OEI addresses the root of the trauma. Using a trauma-root-focused treatment along side a trauma-symptom-focused treatment provided information on how such different trauma treatments impact social anxiety.

Rationale

The purpose of this study is to see what type of measurements show changes in performance-specific SAD symptoms as a result of trauma based treatments. Several types of treatment are regularly used to treat SAD but these may well neglect the potential traumatic root of the disorder. Two types of trauma treatments were chosen for this study: (a) OEI, to treat the traumatic root of the anxiety; and (b) BRAIN, to treat the traumatic symptoms of the anxiety.

Different dimensions of assessment are required to understand the full impact of trauma treatments on the trauma based symptoms of performance-specific SAD. The dimensions of assessment chosen for this study were based on the (a) emotional, (b) behavioural, and (c) psychophysiological symptoms of SAD. The three measurement categories selected were: (a) self report, (b) behavioural, and (c) psychophysiological. Results of this study provided information about the utility of these measures to assess traumatic symptom changes due to trauma treatment for performance-specific SAD.

Research Questions

The purpose of this project was to develop innovative assessment protocols for clinical research on performance-specific SAD. The initial step was to conduct an investigation of OEI (a trauma-root-focused therapy) and BRAIN (a trauma-symptom-focused therapy) on performance-specific SAD. This was a pilot test to explore the assessment and treatment protocols as they related to specificity and sensitivity of measures. The purpose of this study leads to the following questions:

1) Which groups of measures (self-report, behavioural, or psychophysiological) display large effect sizes in response to treatment (sensitivity)?
2) Which group of measures show sensitivity across time?
3) Which groups of measures (self-report, behavioural, or psychophysiological) display different patterns of effect when compared between the treatment groups (specificity)?

These research questions will allow for evaluation of the research protocols used in this project. The viability of these research protocols can be further demonstrated in future research, in which hypotheses associated with specific clinical interventions are explored.

CHATPER 3: METHODS

Participants

There were 9 participants in this pilot study. Original recruitment resulted in 14 participants but 4 dropped out for personal reasons early in the study (2 before treatment started and 2 shortly after treatments started). This left 10 participants, one of whom fell well behind in her treatment schedule, as a result of family relocations associated with contract work, and eventually was withdrawn from the study. Effect size results for potential confounding background factors were small when compared to the effect sizes of the observed treatment effects. The background variables examined to explore comparability of groups were: sex, gender, age, ethnicity, culture, religious affiliation, level of education, and occupation. The form used to gather background information can be seen in Appendix F. The pattern of background factors cannot be described for each participant without compromising the anonymity of participants but a general description of the participants included in this study is as follows: (a) six cisgender females and three cisgender males; (b) six participants were Caucasian, two were East Indian, and one identified as biracial; (c) one participant completed grade 10, one participant had completed high-school/GED, three participants had some post-secondary education, and four participants had some level of graduate education.

A small sample size allows for detailed examination of key features of this clinical research protocol. While a small sample does not provide statistical power, this pilot study design allows for descriptive examination for selection of treatments and measures for future research. Physiological assessment frequently involves small sample sizes due to response demands on participants and intensive demands on research team members.

Instruments

Measures were used at (a) Intake, (b) Pre-Treatment, and (c) Post-Treatment stages of the study. Measures used to screen participants at Intake will be described first, followed by instruments used at Pre- and Post-Treatment stages. Finally, Supplementary measures used to monitor participant anxiety and depression will be described. Together, this collection of assessments provides a rich database for each participant.

Intake assessments. Intake measures were chosen to screen for participant suitability. Since the study involved only short term treatment (7 sessions), participants were assessed for severe and comorbid disorders. Applicants were chosen for the study if their intake assessment scores did not reflect comorbid disorders, or conditions more severe than performance-specific SAD. Short term treatment was considered more appropriate for less severe conditions. Intake was also used to determine whether or not self-reported PSA was present sufficiently to justify entrance to the study. Measures used at intake included: (a) Severity Measure for Social Anxiety Disorder (Social Phobia) – Adult; (b) Severity Measure for Generalized Anxiety Disorder – Adult; (c) Severity of Posttraumatic Stress Symptoms – Adult; (d) Beck Depression Inventory II; (e) Dissociative Experiences Scale; and (f) Personal Report of Confidence as a Speaker. These assessments and their cut-off points are described in the following section.

Severity Measure for Social Anxiety Disorder (SMSAD; Social Phobia) - Adult. This measure consists of 10 items to assess (screen for) severity of social anxiety (phobia) in adults, over the previous 7 days (American Psychiatric Association, 2015a). The measure was designed for screening and follow up (i.e., to assess the status of previously-diagnosed social anxiety). Items involve ratings on 5-point scales, with: (a) 0 = *never*, (b) 1 = *occasionally*, (c) 2 = *half of the time*, (d) 3 = *most of the time*, and (e) *all of the time*. Scores can range from 0 to 40: Higher

scores reflect more severe social anxiety. The total score is then reduced to an average item score by dividing the raw total score by the number of items. This allows severity to be expressed on a 5-point scale: (a) 0 = *none*, (b) 1 = *mild*, (c) 2 = *moderate*, (d) 3 = *severe*, or (e) 4 = *extreme*. During DSM-5 field trials these measures were found to be reliable. The total score is not calculated if 3 or more items are not answered. If only 1 or 2 items are unanswered a prorated score is calculated, dividing the total score by the number of items answered. The Cronbach alpha coefficient was used to assess internal consistency. In the current study, the Cronbach alpha coefficient for this measure was .90.

To be included in this study participants needed to score below a 2. If they scored 2 or higher, their file was reviewed by Dr. Richard Bradshaw (a registered psychologist with 35 years of experience) to decide whether results of the full battery of assessments indicated that applicants would be good candidates for the study.

Severity Measure for Generalized Anxiety Disorder (SMGAD) - Adult. This measure consisted of 10 items to assess severity of Generalized Anxiety Disorder (GAD) in adults during the previous 7 days (American Psychiatric Association, 2015b). Like the Social Anxiety screening measure described above, this instrument was designed for screening and follow up (i.e., to assess the status of GAD symptoms before and after clinical treatment).

Items constitute 5-point scales, with: (a) 0 = *never*, (b) 1 = *occasionally*, (c) 2 = *half of the time*, (d) 3 = *most of the time*, or (e) *all of the time* (American Psychiatric Association, 2015a). Scores can range from 0 to 40: Higher scores reflecting more severe generalized anxiety. The total score is then reduced to an average item score by dividing the raw total score by the number of items. This allows severity to be expressed on a 5-point scale as: (a) 0 = *none*, (b) 1 = *mild*, (c) 2 = *moderate*, (d) 3 = *severe*, or (e) 4 = *extreme*. This instrument was found to

be reliable in DSM-5 field trials. Total score should not be calculated if 3 or more items are not answered. If only 1 or 2 items are unanswered a prorated score is calculated by dividing the total score by the number of items which were answered. Cronbach's alpha coefficient was used to assess internal consistency in the current study, resulting in a coefficient of .73.

To be included in this study participants needed to score below 2. If they scored 2 or higher, their file was reviewed by Dr. Bradshaw to decide whether results of the full battery of measures indicated they constituted good candidates for the study.

Severity Measure for Posttraumatic Stress Symptoms (SMPSS-A) – Adult. This measure consists of 9 items to assess for the severity of Posttraumatic Stress in adults during the previous 7 days (American Psychiatric Association, 2015c). Like the Social Anxiety and General Anxiety measures described above, this was designed for screening and follow up (i.e., to assess the status of PTSD symptoms before and after clinical treatment).

Items constitute 5-point scales, with: (a) 0 = *not at all*, (b) 1 = *a little bit*, (c) 2 = *moderately*, (d) 3 = *quite a bit*, or (e) *extremely* (American Psychiatric Association, 2015c). Total scores can range from 0 to 36: Higher scores indicating greater severity of Posttraumatic Stress. The total score is then reduced to an average item score by dividing the raw total score by the number of items. This allows severity to be expressed on a 5-point scale as: (a) 0 = *none*, (b) 1 = *mild*, (c) 2 = *moderate*, (d) 3 = *severe*, or (e) 4 = *extreme*. This measure was found to be reliable in DSM-5 field trials. The total score should not be calculated if 3 or more items are not answered. If only 1 or 2 items are unanswered a prorated score can be calculated by dividing the total score by the number of items which were answered. Cronbach's alpha coefficient was used to assess internal consistency and in the current study, this coefficient was .79.

To be included in this study participants needed to score below 2. If they scored 2 or higher, their file was reviewed by Dr. Bradshaw to decide whether results of the full battery of measures showed them to be good candidates for the study.

Beck Depression Inventory II. Due to high rates of comorbidity between anxiety and depression (Beck, Steer, & Brown, 1996) the Beck Depression Inventory II (BDI-II) was used to screen for respondents with high levels of depression (or suicidal risk). Those with *moderate* or *high* scores (levels of depression) on the BDI-II were not included in the study. Referrals to counselling services were available for those who may have been at risk of suicide (assessment as outlined in the BDI manual; no candidates were found to be suicidal) and for respondents who reported "*moderate*" (or higher) depressive symptoms on the BDI-II.

The BDI-II is comprised of 21 items, which respondents ranked on 0-3 scales (Beck et al., 1996). Ordinal scale interpretations are: (a) 0 = *no more than usual*, (b) 1 = *more than usual*, (c) 2 = *much more than usual*, or (d) 3 = *all the time*. A total score of: (a) 0-9 is considered "*minimal*" depression, (b) 10-19 is considered "*mild*" depression, (c) 20-29 is considered "*moderate* depression, and (d) 30-63 is considered "*severe*". While these scores suggest levels of depression, it is important to note that the BDI-II is not a diagnostic tool, but rather a reference point for the current experience of depressed mood. A clinical assessment by a qualified mental health professional is required for diagnoses such as Major Depressive Disorder.

The BDI-II has strong psychometric properties. Coefficient alpha for the BDI-II was .92 for 500 outpatients and .93 for 120 college students (Beck et al., 1996). Test-retest reliability was assessed in a sample of 26 outpatients between first and second therapy sessions one week apart. The test-retest correlation coefficient was .93. Convergent and discriminant validity for the BDI-II has also been assessed. Convergent validity is shown in a positive correlation (r =

.37, $p < .001$) between the BDI-II and the Scale for Suicide Ideation (SSI; Beck, Kovacs, & Weissman, 1979) and between the BDI-II and the Beck Hopelessness Scale (BHS; Beck & Steer, 1988; $r = .68$). Both of these measures were shown to positively correlate with depression (Beck, Epstein, Brown, & Steer, 1988; Beck & Steer, 1988). In comparison to the Hamilton Rating Scale for Depression (HRSD) and the Hamilton Rating Scale for Anxiety (HRSA), the BDI correlates more highly with the HRSD ($r = .71$) than the HRSA ($r = .47$; Hamilton, 1959; Riskind, Beck, Brown, & Steer, 1987). Together, these findings support the reliability and validity of the BDI-II. Cronbach's alpha coefficient was used to assess internal consistency. In the current study, Cronbach alpha coefficients were: (a) .87 at Intake, (b) .86 at Pre-Treatment, and (c) .84 at Post-Treatment.

To be included in this study participants needed BDI-II scores less than 19. If they scored 19 or higher, their file was reviewed by Dr. Bradshaw to decide whether results of the full battery of assessments showed them to be good candidates for the study.

Dissociative Experiences Scale (DES). This measure was used to assesses dissociative experiences of respondents by instructing them to rate percentages of time (0%-100%) they experienced various dissociative symptoms, on visual analogue scales (cross hatches on lines; Appendix G; Carlson & Putman, 1993, 2015). All item percentages are added together and divided by the number of items (28). Although there are no clear diagnostic cut-offs, scores between 19.2 and 30 may be associated with borderline personality disorder, acute PTSD, or severe anxiety disorders. Scores greater than 36 suggest *some* form of Dissociative Disorder, and scores greater than 48 warrant further testing for Dissociative Identity Disorder (DID). Actual levels of dissociation can be much higher than indicated by the results of this assessment, because some respondents lack self-awareness regarding their own dissociation. Cronbach's

alpha coefficient was used to assess internal consistency in the current study, and the coefficient was .82.

To be included in this study, participants needed DES scores less than 30. If they scored 30 or higher, their file was reviewed by Dr. Bradshaw to decide whether results of the full battery of measures showed them to be good candidates for the study. See Appendix G for item content and layout for this instrument.

Personal Report of Confidence as a Speaker (PRCS). To be included in this study, participants had to score higher than 15 on this measure. A cut-off of 16 was chosen because this was the point used for determining the clinical sample reported by Paul (1966) during development of a shortened form of this instrument, although other researchers have used different cut-off scores (Gatchel, Hatch, Maynard, Turns, & Taunton-Blackwood, 1979; Jones, Philips, & Rieger, 1995). The original PRCS consisted of 104 items (Gilkinson, 1942) but was shortened by Paul (1966) due to difficulty using the instrument for screening. The shortened PRCS consists of 30 questions related to feelings of confidence as a speaker during respondent's most recent public speaking experiences. Items are answered *true* or *false* (Appendix H). Higher scores indicate greater severity of PSA.

Paul (1966) had two normative groups: (a) a clinical sample, and (b) a non-clinical sample. The clinical sample had 98 subjects, and resulted in a mean score of 20.6 with a standard deviation of 3.31. The mean and standard deviation for the non-clinical sample (n = 523) were 11.6 and 5.9, respectively. Philips, Jones, Rieger, and Snell (1997) conducted a study to develop norms for the PRCS with 1109 college students. They considered: (a) age, (b) gender (697 women, 412 men), (c) race (752 Caucasians, 316 African Americans, and 41 other races), and (c) academic grades, in the evaluation of the PRCS scores. They found no main or

interaction effects for age, gender, or race. The mean score was 14.24 and the standard deviation was 7.76. These findings suggest that age, race, and gender do not significantly affect levels of public speaking anxiety using the PRCS.

Daly (1978) found high internal consistency (Cronbach's alpha = .91) and positive correlations between the PRCS and other speech and social anxiety measures (r = .52 to .97). From a behavioural perspective, Tarico, van Velzen, and Altmaier (1986) found that poor speech performance was associated with higher scores on the PRCS. Cronbach's alpha coefficient was used to assess internal consistency in the current study, and the coefficients were: (a) .81 at Intake, (b) .81 at Pre-Treatment, and (c) .92 at Post-Treatment.

Dependent Variable Measures

In this section, measures used to assess dependent variables are described (some of which were described in the previous section). Assessment types used in this study included: (a) self-report measures, (b) psychophysiological assessments, and (c) behavioural analyses.

The rationale for using all three types of evaluation (self-report, psychophysiological, and behavioural) arises from research findings suggesting that subjective accounts of emotional experiences alone are not as reliable, complete, or accurate as multimodal assessments which include physiological measures (Orr & Roth, 2000). Davidson (1998), in agreement with Orr and Roth (2000), went on to say that it is crucially important that both subjective and objective measures be included in future studies, to build stronger evidence for assessment validity. Lang (1988) listed three main ways to measure emotional experiences: (a) overt reactions, (b) self-report, and (c) physiological changes. Since many symptoms of public speaking anxiety are associated with physiological arousal such as sweating, shaking, or dizziness (Calamaras et al.,

2014), it seemed logical to include physiological measures. In light of the research findings and arguments mentioned, all three types of assessment were included in this study.

Self-report. Three self-report measures were used to asses both broad and narrow spectrum symptoms. Broad versus narrow categorization is decided based on how closely the given symptoms are clustered to the core presenting issue (performance-specific SAD). Broad spectrum symptoms assessed were general Anxiety and Depression. The narrow spectrum symptom was confidence as a speaker. These assessments are described in the following sections.

Personal Report of Confidence as a Speaker. The assessment used to monitor self-reported levels of speaker confidence was the Personal Report of Confidence as a Speaker (Paul, 1966). This was the same assessment used during the intake process, and described under Intake Assessments, above (view instrument in Appendix H).

Beck Depression Inventory II (BDI-II). The assessment used to monitor self-reported levels of depressive symptoms was the Beck Depression Inventory II (Beck, Steer, & Brown, 1996). This was the same assessment used during the intake process, and described under Intake Assessments, above.

Beck Anxiety Inventory (BAI). As mentioned, this measure was used to monitor anxiety in participants at each assessment time to determine whether outside treatment was warranted due to severity of symptoms. The BAI consists of 21 items describing symptoms of anxiety (Beck & Steer, 1993). These symptoms are rated on 4-point scales from 0 to 3, as follows: (a) 0 = "*not at all*," (b) 1 = "*mildly; it did not bother me much*," (c) 2 = "*moderately; it was very unpleasant, but I could stand it,*" (d) 3 = "*severely; I could barely stand it*". Symptoms listed are "Numbness and tingling," "Wobbliness in legs," "Feeling hot," "Unable to relax," "Dizzy or

lightheaded," "Fear of the worst happening," "Heart pounding or racing," "Terrified," "Unsteady," Feelings of choking," "Nervous," "Hands trembling," "Fear of losing control," "Shaky," "Difficulty breathing," "Scared," "Fear of dying," "Indigestion or discomfort in abdomen," "Face flush," "Faint," and "Sweating (not because of heat)."

This self-administered test takes 10 minutes to complete. Total score ratings are: (a) 0-7 = *minimal anxiety*, (b) 8-15 = *mild anxiety*, (c) 16-25 = *moderate anxiety*, or (d) 26-63 = *severe anxiety*. Reliability of the BAI has been examined in several studies. Beck et al. (1988) found high internal consistency with a Cronbach alpha coefficient of .92. Fydrich et al. (1990) found an even higher alpha coefficient of .94 for internal consistency reliability. Test-retest reliability was assessed with a subsample of 83 outpatients (Beck et al., 1988) tested one week apart, resulting in a correlation of .75.

Several types of validity have been explored for the BAI. The content of the BAI matches the outline for diagnosing patients with anxiety disorders (specifically, panic and generalized anxiety disorders). Much like other anxiety scales (Gotlib & Cane, 1989), the BAI has also been found to have moderate correlations with depression scales, such as the Beck Depression Inventory ($r = .50$, $p < .001$; Fydrich et al., 1990) and the Hamilton Psychiatric Rating Scale for Depression - Revised ($r = .25$, $p < .05$; Hamilton, 1960). The BAI is not significantly correlated with the Beck Hopelessness Scale (Beck & Steer, 1988) which measures negative attitudes regarding the future. These type of symptoms are more related to depression and less with anxiety (Beck, 1967, 1976; Beck & Emery, 1985). Cronbach's alpha coefficient was used to assess internal consistency and, in the current study, the coefficients were .57 at Pre-Treatment and .72 at Post-Treatment.

Behavioural assessment.

Timed Behavioural Checklist (TBC). This measure was used to assess performance aspects of PSA. This checklist was adapted in several ways. Clevenger and King (1961) developed this measure, although the length of the checklist made it difficult to use for clinical work (i.e., outside of research studies). The instrument was shortened by Paul (1966), and further amended by Henry (2003). The initial pool of items for the present study was drawn from Henry's list of 20 behavioural displays of public speaking anxiety, which are assessed in 30-second intervals over the first two minutes of a speech task. Two additional symptoms were added to the checklist (see items 21 and 22 in Appendix K). Immediately prior to this study, all 22 categories were examined using pilot speech samples. Collection and analysis of pilot data was done to: (a) select categories which were a better fit for this application, and (b) identify a small number of behavioural observation categories that could be most reliably assessed, to clarify and focus the procedure. These analyses yielded five items with high inter-rater reliability and clinical utility. Items which were retained are 3, 5, 7, 20, and 22. Criteria that were considered when determining item utility were: (a) patterns of inter-rater agreement, (b) likelihood of the behaviours being observable in video recordings of speeches, and (c) ease of use by observers (raters). Each rater's total counts of the five behaviours for all intervals were averaged across two raters to achieve a total TBC for each speech task.

Psychophysiological assessments. Many symptoms of PSA are associated with activation of the limbic system (Calamaras, Anderson, Tannenbaum, & Zimand, 2014), as described in polyvagal theory (Porges, 2007). In this study, limbic system activation was assessed via Electrodermal Activity (EDA) measurement. In the following paragraphs,

rationales and procedures for using EDA to measure limbic system activation assessments are outlined.

Script Driven Symptom Provocation (SDSP). This assessment procedure is based on bioinformational theory, in which it is suggested that the brain stores traumatic memories which, in turn, cause psychophysiological responses. Personal meanings and emotional reactions behind traumatic stimuli can be intentionally triggered (Lang, Levin, Miller, & Kozak, 1983; Levin, Cook, & Lang, 1982). Though often applied in laboratory studies of PTSD for veterans (Pitman et al., 1987; Pitman, Orr, Forgue, Altman, de Jong, & Herz, 1990) SDSP has been applied in studies of anxiety disorders (Levin et al., 1982; Pitman et al., 1990). More recently, SDSP has been applied to study: (a) emotional and cognitive activity associated with PTSD before and after OEI Switching (Grace, 2003), (b) psychobiology and psychopharmacology of PTSD (van der Kolk, 2001), and (c) positron emission tomography following childhood sexual abuse-based PTSD (Shin et al., 1999).

SDSP was used to ensure consistency in measurement of anxiety over time. The procedure started by having participants summarize their most intense emotional and physical reactions associated with PSA using a standardized procedure (van der Kolk, Hopper, & Osterman, 2001) and reporting form (Traumatic Scene Form; Hopper & van der Kolk, 2001). Next, individualized scripts were created and recorded (50-60 second audio files) for each participant. Finally, these recordings were played for participants during certain EDA assessments, to assess the impact of triggering prior to, and following, treatment. The Traumatic Scene form, which participants completed for individualized script creation, can be seen in Appendix I. Participants' reactions to their scripts were measured via EDA assessments.

According to polyvagal theory (Porges, 2007), limbic system structures are activated in response to stressful stimuli. EDA changes as limbic system activity increases during the "fight or flight" response (Schwartz & Andrasik, 2003). A pattern of EDA when recorded scripts were played for participants provided information about their reactions to PSA-related traumatic events. EDA has been shown to be a sensitive measurement of sympathetic nervous system arousal in response to mental stress, including arousal associated with recollection of upsetting events (Neumann & Blanton, 1970). Galvanic Skin Response (GSR, now known as Electrodermal Activity, or EDA) is extremely sensitive to transitory emotions and mental events (Schwartz & Andrasik, 2003). Brown (1974) found EDA to be more responsive to mental events than either Electromyography (electrical activity from muscle movement or tension) or Thermography (measurement of skin temperature; Neumann & Blanton, 1970). The protocol for EDA assessments can be seen in Appendix J.

The palm of the hand contains up to 2000 sweat glands in every square centimeter (Schwartz & Andrasik, 2003). When these glands are activated, they can each send micro-electrical signals along pathways between the deeper, more conductive layers of skin and the skin surface. Skin conductance can be measured by applying two electrodes to the skin to monitor sweat gland activity. When voltage is applied, a circuit is formed and an electric current will flow. Resistance of the skin is dependent on the number of glands that are open. Such resistance will affect the magnitude of the current (according to Ohm's law).

Because EDA is associated with arousal, flat or low response patterns are not adaptive for humans (Schwartz & Andrasik, 2003). Persistent minimal arousal, inattentiveness, and flattened affect are neither healthy nor adaptive. There are times when minimal arousal is beneficial, such as during relaxation, but there are also times when greater stimulation should occur. An example

of a time when increased arousal is beneficial is when one is confronted with a novel stimulus: One needs to be able to recognize and respond to stimuli appropriately. Once an individual has oriented to a stimulus, arousal should return to a baseline level. People sometimes react to stimuli in an overly-sensitive manner (i.e., out of proportion to the threat of the stimulus). Such overreactions require more energy, which results in increased physical tension. In light of these findings, the goal of treatment in this study is to optimize EDA levels in participants, reducing *over-reactive* responses to public speaking.

Cronbach's alpha coefficient was used to assess internal consistency. Calculations were run using the 3 EDA baseline activities (see Appendix J). In the current study, Cronbach's alpha coefficients were .92 at Pre-Treatment and .99 at Post-Treatment.

Procedure

Recruitment. Recruitment was done on a small scale for this initial pilot study through several methods, including: (a) word of mouth through representatives of a Department of Counselling Psychology and through local Toastmasters leaders, (b) a series of three community presentations, and (c) posters throughout the Greater Vancouver and Fraser Valley regions of British Columbia. The poster can be seen in Appendix L. The most successful form of recruitment was word of mouth in the community, followed by the presentations.

Intake. The intake process consisted of informed consent and several self-report assessments to determine whether respondents fit the criteria described in the Intake Assessment portion of this document. This session began with the informed consent process. Each participant was provided with (a) a document describing the study, and (b) a discussion of both the treatments and assessments in the study. The informed consent document can be seen in

Appendix M. Participants signed the document if they were interested in entering the study. After informed consent was complete, intake assessments commenced.

The order in which the assessments were given was: (a) Personal Report of Confidence as a Speaker (Paul, 1966), (b) Severity Measure for Social Anxiety Disorder (Social Phobia) – Adult (American Psychiatric Association, 2015b), (c) Severity Measure for Generalized Anxiety Disorder – Adult (American Psychiatric Association, 2015a), (d) Severity of Posttraumatic Stress Symptoms – Adult (American Psychiatric Association, 2015c), (e) Beck Depression Inventory II (BDI-II) (Beck et al., 1996), and (f) Dissociative Experiences Scale (Carlson & Putman, 2015). These assessments were used together to determine whether each individual would be a good fit for the study. If participants met criteria for inclusion in the study, they completed the Traumatic Scene Form (see Appendix I) which would later be used for Script Driven Symptom Provocation assessment. Those who did not meet the criteria were referred to other community counselling services.

Pre-Treatment and Post-Treatment assessments. There were two parts to each assessment, and both parts were administered at Pre- and Post-Treatment evaluations.

Part one. The first part of each evaluation began with self-report instruments, and proceeded to baseline EDA assessments.

Self-report. Participants were given three self-report instruments to complete. These included: (a) BDI-II, (b) BAI, and (c) Severity of Posttraumatic Stress Symptoms – Adult (SPSS-A) during which participants were asked to consider a socially traumatic (typically, a public speaking) situation. The BAI and BDI were given according to the manualized instructions. The SPSS-A was given according to manualized instructions except that the event listed for the traumatic experience did not need to satisfy “Criterion A” for Posttraumatic Stress Disorder

according to the Diagnostic and Statistical Manual of Mental Disorders (DSM; American Psychiatric Association, 2013). Instead, a *social* criterion was used. Participants were prompted to think of *socially* traumatic events with the following prompt: "Was there a time you felt hurt in a group setting in one (or more) of the following ways: (a) Feeling rejected & criticized, (b) Feeling humiliated & embarrassed, or (c) Feeling deceived & betrayed?" After choosing their stressful experience participants were asked to write a sentence describing the situation, and to indicate the approximate date when the experience occurred. They then completed the SPSS-A according to manualized instructions. Results of analyses of this assessment are not reported in the present report. After these self-report measures were completed, participants were escorted to the psychophysiological laboratory where the next phase of the assessment would occur.

Baseline psychophysiological assessment. The next phase of the assessment involved a baseline EDA assessment at locations E1 and E2 (see Appendix N; Scheirer, Picard, Tilbury, & Farringdon, 2002). It should be noted that EEG data were collected at the same time, but were not included in this thesis. The protocol for the baseline EDA assessment can be found in Appendix J.

Part two. The second part of each evaluation consisted of three components. The first involved Script Driven Symptom Provocation (SDSP) with EDA measurements, followed by behavioural assessment during a speech task, and finally, a brief self-report (PRCS).

Script driven symptom provocation with psychophysiological assessment. This psychophysiological measurement involved assessment at the same two EDA locations as the baseline. After a brief (1 minute) baseline, the audio recording of the individualized trauma script played for the participant and their EDA reactions were recorded. This 1-minute trauma

script time was followed by a final minute of assessment time with no further trauma stimuli. The protocol for this assessment can be seen in Appendix J.

Behavioural assessment. The Timed Behavioural Checklist (TBC) was used to assess behavioural aspects of public speaking anxiety. The assessment consisted of video-recording five consecutive 30-second periods (during a 3-minute speech task) for later analysis of behavioural measures of public speaking anxiety. These behaviors were coded from video recordings by two trained observers (trained and assessed together to maximize consistency of measurement). Total TBC scores incorporated reports averaged across observers, resulting in more objective measurements of PSA.

Participants were asked to stand at the front of a classroom and present 3-minute speeches on alphabetical topics provided to the two observers. The topic for the Pre-Treatment assessment had to start with the letter "P". The topic for the Post-Treatment assessment had to start with the letter "C". The full TBC can be found in Appendix K.

Self-report. The final phase of the assessment was to complete the PCRS. This assessment was administered immediately after the speech task, so that participants would be rating their levels of confidence during a very recent speech.

Treatment. There were two treatments used in the study. The first treatment was Observed and Experiential Integration (OEI; a trauma-root-focused treatment) and the alternative treatment was Breathing, Relaxation, Autogenics, Imagery, and grounding (BRAIN; a trauma-symptom-focused treatment). OEI will be described first. Finally, results of the Credibility of Treatment Questionnaire will be reported, which was used to determine whether participants' expectations, or perceptions, of effectiveness for each treatment likely affected their treatment outcomes.

Observed and Experiential Integration (OEI)

Information session. The information session for OEI involved a PowerPoint presentation and a video demonstration of Dr. Bradshaw using OEI to treat public speaking anxiety. Information presented in the PowerPoint presentation can be seen in Appendix O. A homework sheet for OEI was also provided, to help participants remember techniques they could use at home between sessions. This handout can be seen in Appendix P.

Treatment. Those in the OEI Group received seven 1-hour session of OEI treatment (at the times outlined in the design, presented in Figure 1). Treatments were conducted by Level II certified OEI clinicians. There were two female Masters-level counselors and one male Doctoral-level psychologist. The psychologist had over 35 years of clinical experience and co-developed OEI. The psychologist led the OEI psychoeducational sessions for all participants. One of the Masters-level clinicians had over 12 years of experience. The other Masters-level clinician had over three years of experience. Treatment included all five OEI treatment techniques: Switching, Sweeping, Glitch Massaging, Release Points, and Glitch Holding with Bilateral Stimulation (Bradshaw et al., 2011). Each session started with discussion of elements of public speaking that provoked the most negative intensity (subjective anxiety) in each participant. Such intensity could include: anger, fear, shame, sadness, and/or somatic experiences. Multisensory expansion with imagery was used to help participants identify, and connect with, their anxiety. Once each participant had a target (or event) clearly in his/her mind associated with somatoemotional intensity, the therapist would begin applying the OEI Switching technique. The therapist then tracked through the participant's visual field(s) using either (a) typical Glitch Tracking (based on therapist observation) or "Track-to-Target" (based on participant's subjective report of affect or sensation). As described in Bradshaw et al. (2011),

these “glitches” in eye movement (blinking, squinting, halting, or skipping of eye movement) are often connected with distinct emotional or physical experiences. The Sweep technique was used when necessary to dissipate dissociative artefacts (headaches, drowsiness, etc.) if they arose and did not dissipate sufficiently with OEI Switching.

Helpful Aspects of Therapy questionnaire. Immediately after each treatment session, participants completed the Helpful Aspects of Therapy (HAT) questionnaire to assess what they found to be most helpful or hindering during the treatment session on that day. The HAT consists of seven questions: (a) four short-answer questions, (b) two multiple-choice questions, and (c) an option to briefly describe any outstanding treatment events. A copy of this form can be found in Appendix Q. Results of this inventory are not included in this thesis report.

Breathing, Relaxation, Autogenics, Imagery, and grouNding

Information session. The information session for BRAIN involved a PowerPoint presentation and a video demonstration of Dr. Bradshaw using BRAIN techniques with a client to reduce public speaking anxiety. The PowerPoint presentation can be seen in Appendix R.

Treatment. The content of BRAIN sessions included tools and techniques that participants could use both at home, and before public speaking tasks, to reduce their stress and promote relaxation. The main techniques included in this collection of techniques are: (a) diaphragmatic breathing, (b) progressive muscular relaxation, (c) autogenics, (d) imagery, and (e) grounding techniques. Readers will find an overview of BRAIN techniques in Appendix S. These treatments were conducted by the same clinicians who administered the OEI treatment. The Psychologist co-developed the BRAIN protocol. The Psychologist led the BRAIN psychoeducational sessions for all participants. Both Masters-level clinicians were trained by the

Psychologist. Consultations occurred to address treatment fidelity for this clinical team throughout the study (initially every two days and later on a weekly basis).

Helpful Aspects of Therapy questionnaire. Immediately after treatment, participants completed the HAT questionnaire to assess what they found to be most helpful or hindering during the treatment session for the day. As mentioned above, this form consists of seven questions: (a) four short-answer, (b) two multiple-choice, and (c) one open-ended, to briefly describe any outstanding treatment-related events (see Appendix Q). Results of this inventory are not included in this thesis report.

Credibility of Treatment Questionnaire (CoTQ). This measure consists of 6 items, on which participants provided ratings of each of the two therapies in the study on 10-point scales, immediately following their 2-hour information and demonstration sessions. These questions assess credibility and expectancy for improvement (Borkovec & Nau, 1972). It should be noted that in the larger study from which this thesis emerges, all participants received both therapies (including information sessions and CoTQs). In this way, comparisons in perceptions of the two therapies were possible to determine for this thesis. The purpose of the questionnaire in this study was to determine whether differential expectancies of success likely impacted treatment outcomes. The CoTQ can be seen in Appendix T. Results of the CoTQ suggest that there were no differences in how participants saw the two therapies (in terms of credibility or expectancy of success).

A paired-samples t-test was used to assess differences in how credible participants saw the two treatments. There was no significant difference between the therapies: OEI ($M = 43.89$, $SD = 4.70$) and BRAIN ($M = 44.33$, $SD = 4.56$), $t(8) = -.36$, $p = .73$ (two-tailed). The difference between means was .44 with a 95% confidence interval from -3.32 to 2.43. The eta squared

statistic (.02) indicates there is a small effect size. This clearly suggests that different expectations for the success of the treatments did not play significant roles in treatment outcome.

Interview. After the Post-Treatment assessment, participants were interviewed by Dr. Marvin MacDonald. The purpose of this interview was to add depth and understanding regarding the subjective experiences of participants, with hopes of understanding how the treatments impacted them. Questions used in this interview can be seen in Appendix U. Results of these interviews are beyond the scope of this thesis project but will be reported in future publications.

Analysis

A pilot study design with a small sample size allows for descriptive examination for selection of measures for future research. In this study, parametric analysis was chosen to describe the relationships among interval-level variables. The interval-level variables used were: (a) established self-report measures (PRCS, BAI, and BDI-II), (b) frequency of behaviour in the performance tasks (TBC), and (c) a physiological component of anxiety (EDA). Because the low power prevented inferential analysis, effect size descriptions were used to guide evaluation of protocol performance in this pilot study.

Measures were evaluated for utility based on the principals of sensitivity and specificity (Sox, 1986). For the purposes of the present study, the definition of sensitivity is the proportion of accurate positive indicators of an index state (high anxiety). Specificity is defined as the proportion of accurate negative indicators of an index state (low anxiety). The results of parametric analysis to descriptively evaluate sensitivity and specificity will help develop stronger protocols for future studies.

CHAPTER 4: RESULTS

Preliminary Analysis

This pilot study was designed with a small sample size to allow for descriptive examination for selection of measures for future research. Parametric analysis was chosen to describe the relationships among interval-level variables. Assumptions of normality, homoscedasticity (homogeneity of variance), and reliability underlie inferential and descriptive parametric analyses.

Reliability (internal consistency) was assessed using Cronbach's Alpha for psychometric instruments used in this study (PRCS, SMSAD-A, SMGAD-A, SPSS-A, DES, BDI-II, EDA, BAI) and psychophysiological assessments. These coefficients can be seen in Table 1.

Normality for each instrument (at each administration) was assessed using the Kolmogorov-Smirnov test of normality. Normality was assessed for each 1-minute activity during EDA assessments. All assessments satisfied the assumption of normality except: (a) Pre-Treatment script-driven EDA; (b) Post-Treatment BDI; and (c) Post-Treatment baseline EDA. Logarithm or Square Root transformations were applied to these variables, resulting in satisfaction of the normality assumption in each case. Since the assumption of normality was not met for the BDI-II at Post-Treatment, a Square Root transformation was applied to both Pre-Treatment and Post-Treatment scores. After transformation the Post-Treatment distribution of BDI-II scores met the assumption of normality according to the Kolmogorov-Smirnov test.

To check the equality of error variance (homoscedasticity), Levene's Test was used. Every administration of each instrument satisfied the assumption of homoscedasticity ($p > .05$). Box's Test for equality of covariance matrices was also used, and it was apparent that no data violated this assumption.

Table 1

Measurement Reliability

	Intake	Pre-treatment	Post-treatment
PRCS	0.81	0.81	0.92
SMSAD-A	0.9	-	-
SMGAD-A	0.73	-	-
SPSS-A	0.79	-	-
DES	0.82	-	-
BDI-II	0.87	0.86	0.84
EDA	-	0.92	0.99
BAI	-	0.57	0.72

Note: The full titles for each measurement are as follows, the: (a) PRCS is Personal Report of Confidence as a Speaker, (b) SMSAD-A is Severity Measure for Social Anxiety Disorder (Social Phobia) – Adult, (c) SMSAD-A is Severity Measure for Generalized Anxiety Disorder – Adult, (d) SPSS-A is Severity of Posttraumatic Stress Symptoms – Adult, (e) DES is Dissociative Experiences Scale, (f) BDI-II is Beck Depression Inventory II, and (g) BAI is Beck Anxiety Inventory. The (a) EDA and BAI were not administered during the Intake process and (b) the SMSAD-A, SMGAD-A, SPSS-A, and DES were not administered during Pre-Treatment or Post-Treatment assessments.

Many of the assumption checks are tied to the practice of inferential statistics. Descriptive analyses will rely on conventional uses of effect size descriptions: (a) .14 and greater are large effects, (b) .06 to .13 are medium effect, and (c) .05 and lower are small effects (Cohen, 1988).

Research Questions 1-3

The research questions address (a) treatment effects, (b) time effects, and (c) specificity effects. These effects are explored for all the measures in the treatment protocol. Each category of measures is presented below in the sequence of: (a) self-report, (b) behavioural, and (c) psychophysiological. Descriptive statistics for each measure are presented in Appendix V. After

the overall ANOVA results are presented for each measure, implications for research questions 1 to 3 are summarized.

Self report measures. The self report measures examined in this study were: (a) Personal Report of Confidence as a Speaker (PRCS), (b) Beck Anxiety Inventory (BAI), and (c) Beck Depression Inventory II (BDI-II).

In addition to the narrow spectrum assessments (those closely associated with performance-specific Social Anxiety Disorder [SAD]) used in this study, two broad spectrum symptom patterns were assessed: Depression and Anxiety were assessed using the Beck Depression Inventory II and the Beck Anxiety Inventory, respectively. Anxiety and depression are very common in mental health and clinical work settings in general. Both are also evident in research findings that show high prevalence rates and considerable comorbidity with specific phobias like performance-specific SAD (American Psychiatric Association, 2013). In light of such comorbidity, the BDI-II and BAI were included in this study. Of greatest interest was the impact of OEI on broad spectrum symptoms.

Personal Report of Confidence as a Speaker (PRCS). Mixed between-within subjects ANOVA (2 X 2) was conducted. The interaction effect between time and group was small and nonsignificant, Wilk's $\Lambda = .97$, $F\ (1, 7) = .25$, $p = .633$, $\eta^2 = 0.034$. There was a large main effect for time, Wilk's $\Lambda = 0.39$, $F\ (1, 7) = 10.78$, $p = .013$, $\eta^2 = .606$, and it was so large that is also happened to be statistically significant even in the small sample. Participants in both groups showed reductions in self-reported PSA from Pre- to Post-Treatment (approximately 5 points for OEI and 6 points for BRAIN). There was a negligible group main effect, $F\ (1, 7) = .13$, $p = .731$, $\eta^2 = .018$. There was a large effect size for the within subjects main effect but effect sizes for between subjects and interaction effects were very small. Both treatments have the same

impact on the confidence as a speaker of the participants. These scores show increasing confidence for all participants.

Beck Depression Inventory II (BDI-II). Results for both non-transformed and transformed scores are provided to show the robustness of results despite the presence of skewness and/or kurtosis. Similar results were obtained for both versions of the analysis.

Untransformed scores analysis. A mixed between-within subjects ANOVA (2 X 2) was conducted using untransformed BDI-II scores. The interaction effect between time and group was large, Wilk's $\Lambda = .29$, $F\ (2, 7) = 17.17$, $p = .0.004$, $\eta^2 = .710$, and it was so large that it also happened to be statistically significant, even in the small sample. There was a moderate effect for time which was non-significant, Wilk's $\Lambda = 0.87$, $F\ (1, 7) = 1.07$, $p = .335$, $\eta^2 = .133$. There was a large between-subjects effect which was non-significant, $F\ (2, 7) = 2.57$, $p = .153$, $\eta^2 = .268$. Refer to Figure 1 for a visual plot of these relationships.

Transformed Scores Analysis. A mixed between-within subjects ANOVA (2 X 2) was conducted using square root transformed variables of both Pre- and Post-Treatment BDI scores. There was a large interaction effect between time and group, Wilk's $\Lambda = .36$, $F\ (2, 7) = 12.7$, $p = .0.009$, $\eta^2 = .644$, and it was so large that it also happened to be statistically significant, even in the small sample. There was moderate effect for time which was non-significant, Wilk's $\Lambda = 0.87$, $F\ (1, 7) = 1.06$, $p = .338$, $\eta^2 = .131$. There was a large between-subjects effect which was non-significant, $F\ (2, 7) = 1.91$, $p = .210$, $\eta^2 = .214$. Figure 1 adequately describes the interaction effect for the transformed scores as well.

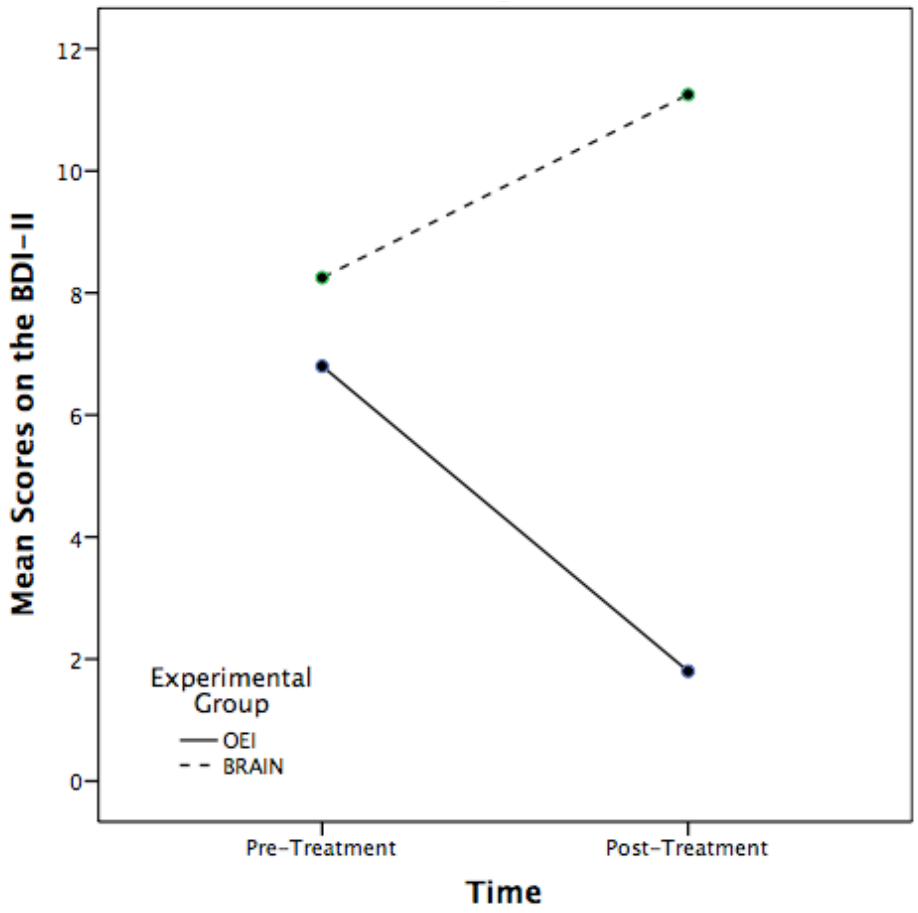

Figure 1. Beck Depression Inventory II (BDI-II) ANOVA Plot for changes from Pre-Treatment to Post-Treatment assessments for the (a) Observed and Experiential Integration (OEI) and and (b) Breathing, Relaxation, Autogenics, Imagery, and grouNding (BRAIN).

Beck Anxiety Inventory (BAI). A mixed between-within subjects ANOVA (2 X 2) was conducted. There was a large interaction effect between time and group which was non-significant at conventional alpha levels, $\Lambda = .58$, $F\ (1, 6) = 4.42$, $p = .080$, $\eta = .424$. If, however, we used an alpha level of .1 (suggested by Stevens [1996] for small sample sizes), this effect becomes significant. There was a moderate effect for time which was non-significant, $\Lambda = 0.92$, $F\ (1, 6) = .56$, $p = .484$, $\eta = .085$. There was a large between-subjects effect which was non-significant, $F\ (1, 7) = 5.418$, $p = .059$, $\eta = .475$. Between group differences did not mask clinical effects in this sample, and this pattern may well hold for future samples.

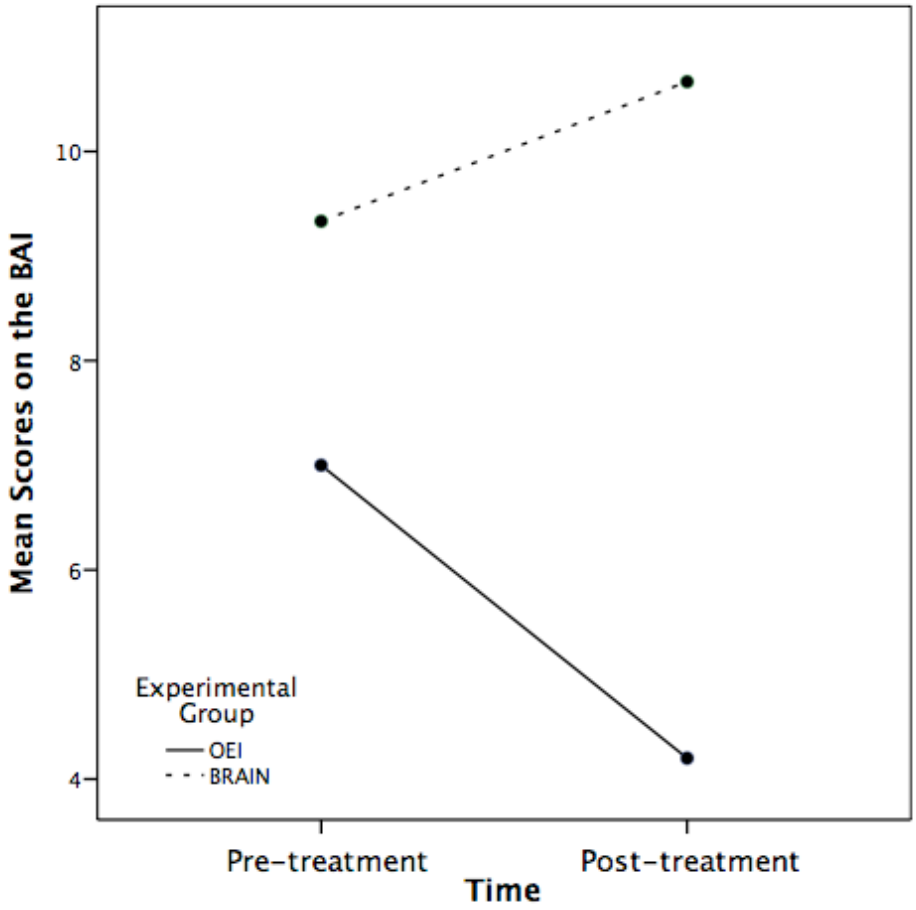

Figure 2. Beck Anxiety Inventory plot of cell means for changes from Pre-Treatment to Post-Treatment assessment times for the (a) Observed and Experiential Integration (OEI) and and (b) Breathing, Relaxation, Autogenics, Imagery, and grouNding (BRAIN).

Self report summary. The research questions refer to: (a) interaction effect, (b) sensitivity to change over time, and (c) specificity. Some self-report measures showed greater sensitivity and specificity than others. As a whole, the self-report measures did show utility in understanding the impact of these two treatments for this population.

The three self-report measures were the: (a) PRCS, (b) BDI-II, and (c) the BAI. The PRCS shows no sensitivity to differential treatment effects. The PRCS did show that confidence reflects sensitivity to change over time. The PRCS did not, however, show specificity as both treatments addressed the confidence based symptoms assessed by this measure. The BDI-II shows strong sensitivity to differential treatment effects. Time effects for the BDI-II show up for

the two treatment groups in different directions. The BDI-II showed specificity by demonstrating a beneficial impact of the trauma-root-focused treatment while the trauma-symptom-focused treatment actually showed a sensitization effect. Similarly, the BAI shows strong sensitivity to differential treatment effects. Time effects for the BAI show up for the two treatment groups in different directions. The BAI showed specificity by revealing a beneficial impact of the trauma-root-focused treatment while the trauma-symptom-focused treatment actually showed a sensitization effect. The PRCS tends to show similar patterns for the trauma-root-focused and trauma-symptom-focused treatments. On the other hand, the BDI-II and the BAI tend to show the differential effects of the two types of treatment. The depression and anxiety symptoms show positive responses to the trauma-root-focused treatment while the confidence measure shows beneficial results of both the trauma-root-focused treatment and the trauma-symptom-focused treatment.

Behavioural measures. The behavioural measure used in this study was the Timed Behavioural Checklist (TBC).

Timed Behavioural Checklist. A mixed between-within subjects ANOVA (2 X 2) was conducted. There was no interaction effect between time and group, Wilk's $\Lambda = 1.00$, $F\ (2, 7) = .00$, $p = .976$, $\eta^2 = 0.000$. There was a large effect for time, Wilk's $\Lambda = 0.33$, $F\ (1, 7) = 14.56$, $p = .007$, $\eta^2 = .675$, and it was large enough that it also was statistically significant in the small sample. All participants showed reduced scores on the TBC, indicating lower levels of performance-specific SAD behaviours. There was a moderate between-subjects main effect which was non-significant, $F\ (1, 7) = .1.09$, $p = .332$, $\eta^2 = .134$.

In summary, the TBC showed no sensitivity to differential treatment effects. The TBC did show sensitivity to change over time. As can be seen in the descriptive statistics in Appendix

V, there were approximately 14 point drops in mean scores for both the OEI and BRAIN groups from Pre- to Post-Treatment. The TBC showed a lack of substantial specificity, because the TBC tended to show similar patterns for the trauma-root-focused and trauma-symptom-focused treatment groups.

Psychophysiological measure. The psychophysiological assessment used in this study was electro dermal activity (EDA). Baseline level of EDA was compared to a script driven symptom provocation (SDSP) condition level of EDA.

Electrodermal Activity (EDA). A mixed between-within subjects ANOVA (2 X 2) was conducted. Baseline data and SDSP data analysis was conducted for each of two time periods (Pre-Treatment and Post-Treatment). Two ANOVA analyses were run on the EDA data: (a) Pre-Treatment baseline EDA in comparison to Pre-Treatment SDSP EDA, and (b) Post-Treatment baseline EDA in comparison to Post-Treatment SDSP EDA. Results of these two ANOVA procedures were descriptively compared. The OEI group showed less psychophysiological increase than did the BRAIN group, from baseline to SDSP at Post-Treatment. This pattern was not present at the pre-treatment assessment time.

Pre-treatment EDA results. A Mixed between-within subjects ANOVA (2 X 2) was used to evaluate the impact of OEI and BRAIN on EDA levels across two conditions (baseline and SDSP). There was no interaction effect between triggering and group, Wilk's $\Lambda = .99$, $F\ (1, 7) = .154$, $p = .702$, $\eta^2 = .014$. There was a large effect for triggering, Wilk's $\Lambda = .70$, $F\ (1, 7) = 4.75$, $p = .052$, $\eta^2 = .302$, nearly meeting conventional significance levels. Both groups showed increased EDA activity when the trauma script was played. There was no between-subjects effect, $F\ (1, 7) = .13$, $p = .725$, $\eta^2 = .012$. These results suggest that (a) both groups responded to

the trigger with increased EDA levels, and (b) the groups did not differ in how they reacted to the Pre-Treatment SDSP condition.

Post-treatment EDA results. A mixed between-within subjects ANOVA (2 X 2) was used to evaluate the impact of OEI and BRAIN on EDA levels across two conditions (baseline and SDSP). There was a large interaction effect between triggering and group which was non-significant, Wilk's $\Lambda = .77$, $F\ (2, 7) = 2.36$, $p = .163$, $\eta^2 = .228$ (See Figure 3). The 23% effect size is large, but not statistically significant because of the low power of the test with this small sample. This pattern shows a tendency for the OEI group to increase less (from baseline) in response to SDSP than the BRAIN group at Post-Treatment. There was a large main effect for triggering, Wilk's $\Lambda = .56$, $F\ (1, 7) = 6.41$, $p = .035$, $\eta^2 = .445$, and it was so large, that is also happened to be statistically significant, even in the small sample. Participants showed increased EDA levels from baseline when triggered with SDSP. There was a moderately large between-subjects effect which was non-significant, $F\ (2, 7) = 2.11$, $p = .184$, $\eta^2 = .209$. Descriptively, it is helpful to see this pattern displayed in the plot below (Figure 1).

Psychophysiological measurement summary. The research questions have been presented in a specific order. (a) Research question one refers to the treatment effect of OEI when compared to BRAIN. This question is answered by the descriptive comparison of the pre-treatment analysis to the post-treatment analysis. Since the OEI group showed less sensitivity to SDSP at post-treatment but not a pre-treatment assessment, the contrast between these two analyses suggest that EDA measures can detect differential treatment effects. (b) Research question two examines sensitivity to change over time of treatment effects. EDA is a sensitive measure to triggering (SDSP) effects for both treatment groups. (c) Research question three exams specificity between the treatment groups. The pre-treatment EDA analysis does not

suggest any specificity between BRAIN and OEI. This simply shows the groups were similar in response to the SDSP condition at pre-treatment assessment. The post-treatment assessment shows specificity between groups since the OEI group displayed reduced reactivity to SDSP. Thus the EDA measure seems capable of demonstrating specificity since the lack of specificity at pre-treatment contrasted with the specificity evident at post-treatment.

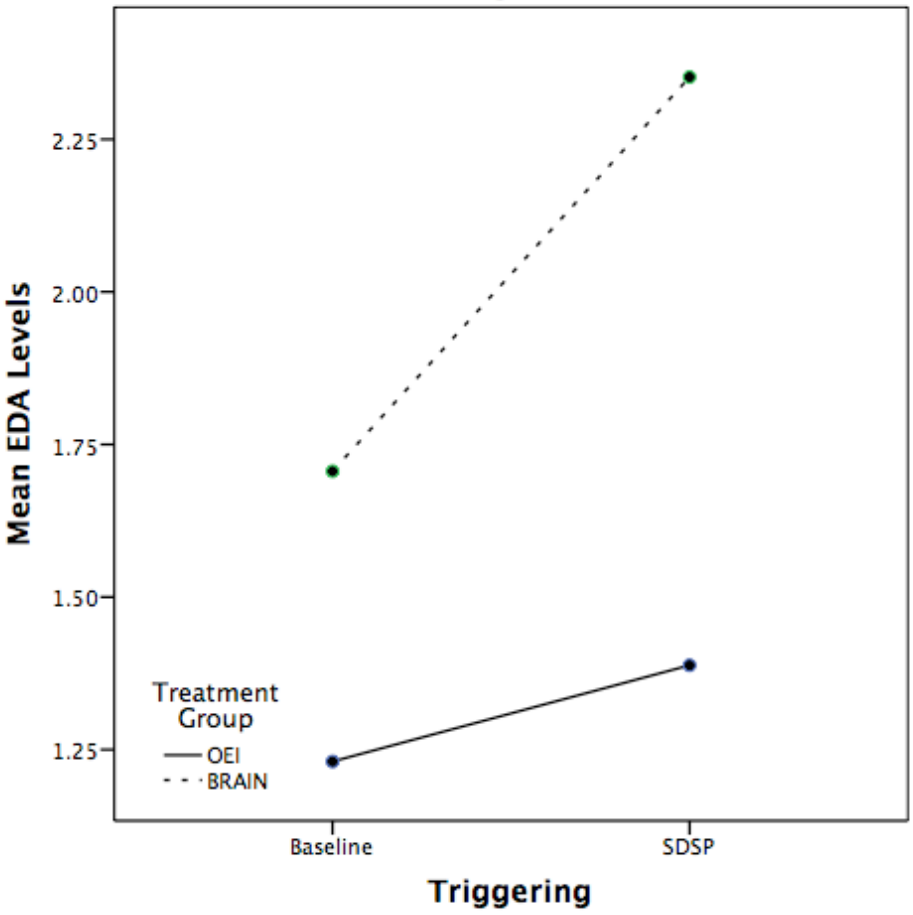

Figure 3. Plot of cell means for Electrodermal Activity (EDA) changes from Baseline to Script Driven Symptom Provocation (SDSP) for two groups at Post-Treatment assessment time: (a) Observed and Experiential Integration (OEI) and (b) Breathing, Relaxation, Autogenics, Imagery, and grouNding (BRAIN).

Results Summary

The self-report, behavioural, and psychophysiological measures showed utility in understanding how both the trauma-root-focused and the trauma-symptom-focused treatment

groups shaped the symptoms of performance-specific Social Anxiety Disorder. Different measures focused on different processes addressed in treatment and thus displayed different patterns of sensitivity and specificity. The various processes measured with these assessments are: (a) confidence, (b) depression, (c) general anxiety, (d) speaking behaviour, and (e) psychophysiological arousal. These can be separated into three categories of processes: (a) narrow spectrum symptoms, (b) broad spectrum symptoms, and (c) psychophysiological symptoms. Narrow spectrum symptoms are: (a) speaking confidence, and (b) speaking behaviour. Broad spectrum symptoms are: (a) depression and (b) anxiety. The psychophysiological symptom was EDA. The focused of treatment (trauma-root-focused versus trauma-symptom focused) impacted which processes were activated for change.

The self-report measures displayed this differentiation clearly. The confidence measure, PRCS: (a) did not show differential sensitivity to treatment, (b) was sensitive to time, and (c) did not show specificity because both treatments affected confidence in the same way. The BDI-II showed: (a) high differential sensitivity to treatment; (b) time sensitivity for the two groups, in light of the differential sensitivity in the interaction (research question 1) shown by contrasting directions for the two treatment groups; and (c) high specificity because OEI activated a process of treatment which impacted depressive symptoms which BRAIN did not activate. The BAI showed: (a) high sensitivity to treatment, (b) differential time sensitivity for the two groups, and (c) high specificity because OEI addressed a process of treatment which impacted anxious symptoms which BRAIN did not address. These measures give a great deal of information about how self-report assessments show how treatments impact various symptom processes.

The behavioural measure, TBC, showed: (a) low sensitivity to differential treatment effects, (b) high sensitivity for time, and (c) low specificity because both treatments activated

behavioural processes. The moderate between groups effect size (13%) might be worth exploring in future research if this strength of relationship is replicated.

The psychophysiological results, Electrodermal Activity (EDA), were shown through a comparison of two analyses: (a) pre-treatment comparison of reactivity for the two treatment groups and (b) a post-treatment comparison of reactivity for the two treatment groups. The comparison of the pre-treatment and post-treatment results showed (a) differential treatment effects, the pre-treatment analysis showed no differential reactivity between treatment groups but the post-treatment groups demonstrated a decrease in reactivity in the OEI group. The comparison of the pre-treatment and post-treatment results showed (b) a strong sensitivity for time for both groups. The comparison of the pre-treatment and post-treatment results showed (c) specificity through a shift from a non-specific pattern of triggering at pre-treatment while specificity at post-treatment showed through decreased levels of triggering for the OEI group.

The significance of the results pattern becomes clearer when displayed in Appendix W. There appear to be broad spectrum symptoms, narrow spectrum symptoms, and psychophysiological symptoms. The two types of treatment (trauma-symptom-focused versus trauma-root-focused) are presented using concentric circles associated with the processes activated by the respective treatments. The trauma-root-focused treatment activates processes beyond the scope of the processes activated by the trauma-symptom-focused treatment. Note that self-report instruments fell both within the trauma-root-focused treatment and the trauma-symptom-focused treatment. It is important to recognize the value of using multiple types of assessment to encompass broad and narrow spectrum symptom change as a result of various treatment methods.

CHAPTER 5: DISCUSSION

This project constitutes a contribution to previous knowledge in the areas of (a) protocol development for clinical research in performance-specific Social Anxiety Disorder (SAD), (b) application of trauma theory and treatments used in this study, and (c) added understanding of narrow versus broad spectrum symptom change. Finally, recommendations will be made for further protocol development for clinical research on SAD which addresses psychophysiological activation.

Reflections on Innovation in Protocol Design and Theory Application

Protocol design. Protocol development is important for emerging directions in clinical research, to guide researchers' choices of treatment models and assessment procedures. In this study, the focus for protocol development for clinical research in performance-specific SAD was the interaction between treatment type and symptom processes that were activated. Examining a range of measurement strategies showed how different treatments activated different processes for our participants. The diagram in Appendix W displays the integration of these principles.

Patterns of results revealed connections between treatment types and which symptom processes were activated. The diagram in Appendix W shows this pattern of interconnections. Symptoms can be distinguished as: (a) narrow spectrum symptoms, such as speaker confidence and public speaking behaviour (light grey); (b) psychophysiological symptoms, such as electrodermal activity (medium grey); and (c) broad spectrum symptoms, such as general anxiety and depression (darker grey). The two treatment types employed in this study are represented in the figure by concentric circles, where the trauma-root-focused treatment (solid line) includes items within the trauma-symptom-focused circle (dashed line). As shown in the results and displayed in the diagram in Appendix W, the trauma-symptom-focused treatment seemed to

activate processes of (a) speaker confidence and (b) speaking behaviour. These processes were also activated by the trauma-root-focused treatment. In addition to those processes, the trauma-root-focused treatment activated movement (toward improvement) of the processes of: (a) electrodermal activation in response to a trigger, (b) general anxiety, and (c) depression. In response to trauma-root-focused treatment: (a) broad spectrum symptoms improve and (b) psychophysiological activation associated with past traumatic social experiences is alleviated. Diverse types of measurements, such as self report, behaviour sampling, and psychophysiological measures, will be helpful in understanding broad spectrum, narrow spectrum, and psychophysiological symptoms.

Application of trauma theory. Innovative applications of trauma treatments were implemented in this study for reducing anxiety symptoms. The similarity of trauma and anxiety symptoms suggested a traumatic root to performance-specific SAD (Calamaras, Anderson, Tannenbaum, & Zimand, 2014; Erwin et al., 2006; Stein, Walker, & Forde, 1996). This relationship was supported by the descriptive analyses in this study. All participants in the study reported memories of socially traumatic events, which left them feeling: (a) rejected and criticized, (b) humiliated and embarrassed, and/or (c) deceived and betrayed. All but one of these traumatic experiences related directly to public speaking. The connection between trauma and anxiety suggests the utility of applying trauma theory and treatment for performance-specific SAD (Erwin et al., 2006).

It is worth noting that the different trauma treatments activated different symptoms processes. The assessments in this study showed utility in differentiating between a trauma-root-focused treatment and a trauma-symptom-focused treatment. Descriptive analysis of the assessments for the trauma-root-focused treatment group showed improved: (a) speaker

confidence, (b) public speaking behaviour, (c) EDA reactivity, (d) general anxiety, and (e) depression. The trauma-symptom-focused treatment descriptive analyses results showed improved: (a) speaker confidence and (b) public speaking behaviour. It would appear different treatment foci impact which processes are activated for improvement. The trauma-root-focused treatment seemed to impact processes which lay at a deeper level of emotional experience (Porges, 2007; van der Kolk, 2001, 2002; Yehuda, 1997, 2002). The impact of OEI, the trauma-root-focused treatment, on electrodermal activation indicates the hyperarousal and hyper activation responses to triggers are decreased after treatment. This coincides with the polyvagal theory of physiological activation to threat, which appears out of context in traumatized individuals. This treatment may allow clients to live life with less physiological fear and to lower their baseline levels of anxiety and trauma.

The connection between trauma and anxiety, supported through descriptive analyses of this study, contributes to trauma-informed research and clinical practice. Anxiety can be as crippling as trauma, stopping many people from living the lives they desire. The similarity between trauma and anxiety symptoms is important when considering treatment for individuals with anxiety. If this obvious similarity is neglected, clients may not receive the necessary treatment. Anxiety reduction is multifaceted, including physiological, cognitive, behavioural, and emotional changes. Therapists will miss a large aspect of anxiety if treatment neglects the physiological impact of socially traumatic events (Porges, 2007; van der Kolk, 2001, 2002; Yehuda, 1997, 2002). In addition to other mechanisms of change, OEI addresses neurobiological (sympathetic and parasympathetic nervous system) arousal, including emotional and psychophysiological sequelae of socially traumatic memories (see Appendix E for a more thorough presentation of how OEI incorporates other theoretical mechanisms of change). This

frees clients, so they can better access and use their higher-order thinking capacities during public speaking and other performance tasks. It is hypothesized that this integration of limbic and cortical functioning could empower clients to heal in more comprehensive ways.

Broad and narrow spectrum symptoms. Reduction in depression (BDI-II scores) for the OEI group was interesting, considering that reductions in BDI-II scores were not found in a previous OEI study (Williams, Bradshaw, McDonald, & Blake, 2006). Two differences in OEI treatment protocols may explain this disparity in findings: First, only three hours of OEI treatment were administered in the Williams et al. study whereas seven hours of OEI were provided in the current study. Depression may be a peripheral symptom which does not change until (a) longer treatment has occurred, or (b) the central symptoms have been addressed. Secondly, in the Williams et al. study, a highly manualized version of OEI treatment was used, targeting treatment of each participant's specific sexual assault traumas. In the current study, OEI treatment was targeted on a broader range of experiences identified by participants. Rather than keeping treatment exclusively focused on public speaking targets, therapists were instructed to let participants guide their sessions, with targets that spontaneously emerged from focusing on their negative emotions and intense physiological experiences associated with performance-specific SAD. Treatment with a highly manualized form of OEI to address narrow spectrum symptoms (sexual assault traumas, in the Williams et al. study) would be expected to show improvement in targeted narrow spectrum symptoms (as was the finding in the Williams et al. study). Less tightly targeted OEI treatment in the current study resulted in reductions of both narrow spectrum (behaviour and self-reported confidence) and broad spectrum (depression and anxiety) symptoms.

Recommendations for Additional Protocol Development and Research

This portion of the discussion is provided to delineate parameters of the study and to make suggestions for future research on performance-specific SAD. The elements addressed are: (a) sampling methods, (b) psychophysiological assessments, (c) broad spectrum symptom patterns, and (d) treatment targets. Following these, will be suggestions regarding how these elements can be used together to inform future research design.

The sample size was intentionally small to permit pilot testing of the complex design and assessment processes implemented in this project. The purpose of the small size was to determine what adjustments would be necessary in both assessment and treatment protocols for future studies. No attempt was made to collect a sample from a large geographical catchment area, thereby limiting the generalizability of results to a larger population. Participant samples in future research studies should be large enough to support statistical inference with adequate power, and selected from wide geographical regions. Broadening the recruitment area and increasing sample size will improve the generalizability of findings. The decisions on sample size for this study allowed for descriptive analysis of the data to provide information for protocol design in future research.

Exploration of EDA assessment revealed rewarding applications for future research involving psychophysiological correlates of anxiety. This strategy could be an innovative way to gain more comprehensive understanding of symptom patterns in future research. Psychophysiological assessment also permitted documentation of reductions in triggered emotional reactions (reactivity), which would not have been possible with self-report or behavioural observations (at least not at the same level of measurement sensitivity).

The BDI-II and BAI should clearly be used at intake, and in all subsequent assessments, along with measurements of narrow spectrum symptoms. These instruments showed promise for detecting group differences in broad spectrum symptom patterns. It will be valuable for future clinical practice and research to assess how, and why, OEI impacts broad spectrum symptoms like depression and anxiety.

In this study, OEI treatment was not tightly targeted at Public Speaking Anxiety stories. This could be seen as a limitation, if researchers were only considering narrow spectrum (PSA) symptoms. Results of this study, however, support continued therapist flexibility to deliver client-centered OEI treatment: Such treatment resulted in improvements for both narrow spectrum (behaviour and self-reported confidence) *and* broad spectrum (depression and anxiety) symptoms.

Future OEI treatment in research studies should be administered (a) in a variety of contexts, (b) at different levels of target specificity, and (c) with variations in treatment dosage and scheduling. In some future OEI studies, sessions could be more tightly focused on performance-specific SAD targets to more intensively treat narrow spectrum symptoms. This could involve: (a) target redirection by therapists, (b) script-driven symptom provocation in sessions, and/or (c) virtual reality exposure. In other future studies, OEI target specification should permit participant-directed target selection allowing treatment to reduce broad spectrum symptoms along with the narrow spectrum symptom change. When applying less stringent target selection, therapy duration may need to be increased to permit clients to work through more trauma-root-based experiences. More general treatment which begins with the "person-as-a-whole" will likely facilitate processing of core early traumas. After those core traumas have been addressed, participants may naturally return to narrow spectrum symptom targets, or

reduction in narrow spectrum symptoms may occur alongside the trauma processing, as was the case in this study. Variations in targeting and duration of OEI treatment will reveal more precisely how OEI affects symptoms.

These suggestions for future research will improve: (a) generalizability of findings; (b) potency of treatment; and (c) assessment of the effects of OEI on broad spectrum, narrow spectrum, and psychophysiological symptoms. Continued research on OEI will provide greater insight regarding how this treatment can best be used to help clients in therapy.

Conclusion

The findings of this study will be useful for establishing key parameters for development of clinical research for social anxiety. These innovative approaches to clinical research on social anxiety address psychophysiological activation. There is clear support for application of trauma treatment to treatment of performance-specific SAD. If these patterns continue to be supported by additional research this will help: (a) those with performance-specific SAD, (b) clinicians, and (c) future researchers. Both OEI and BRAIN were effective in improving the performance-specific SAD symptoms of speaker confidence and speaking behaviour. After treatment, psychophysiological (EDA) assessments revealed that the OEI group was less reactive to triggered reminders of social traumas than the BRAIN group. More stringent therapeutic focus on performance-specific SAD targets during OEI treatment may lead to superior outcomes in terms of narrow spectrum symptoms while less tightly targeted treatment may allow for greater reductions in broad spectrum symptoms like depression and general anxiety alongside narrow spectrum symptom improvement. The findings of this study will be beneficial for enhancing assessment and treatment protocols in future clinical research for performance-specific SAD.

Based on community survey results, there is potential to help the one-third of the individuals in the general population who experience performance-specific SAD (Kessler, Stein, & Berglund, 1998; Stein, Walker, & Forde, 1996). Research indicates that those with performance-specific SAD have higher unemployment rates, lower incomes, and lower education levels than those who do not (Calamaras, Anderson, Tannenbaum, & Zimand, 2014). These findings suggest that treatment for performance-specific Social Anxiety Disorder will help people to reach their vocational, financial, and educational goals and, in turn, make contributions to society.

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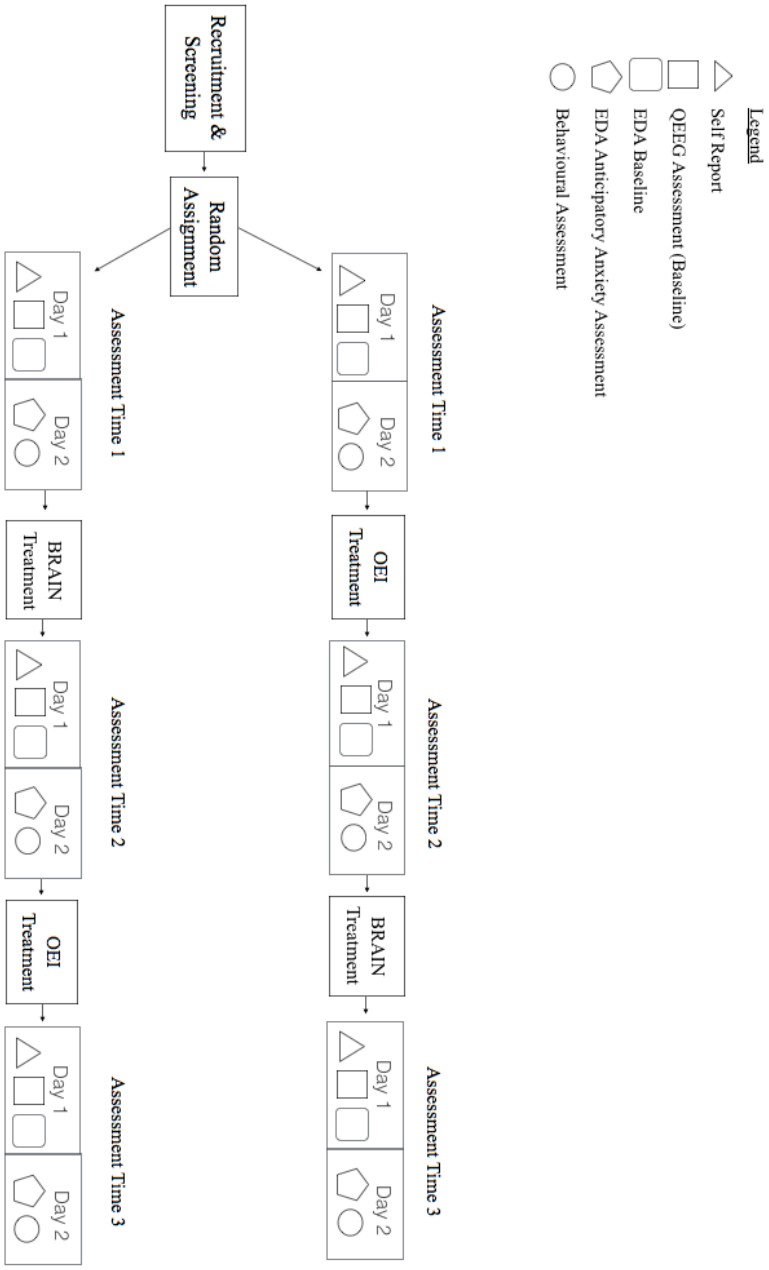
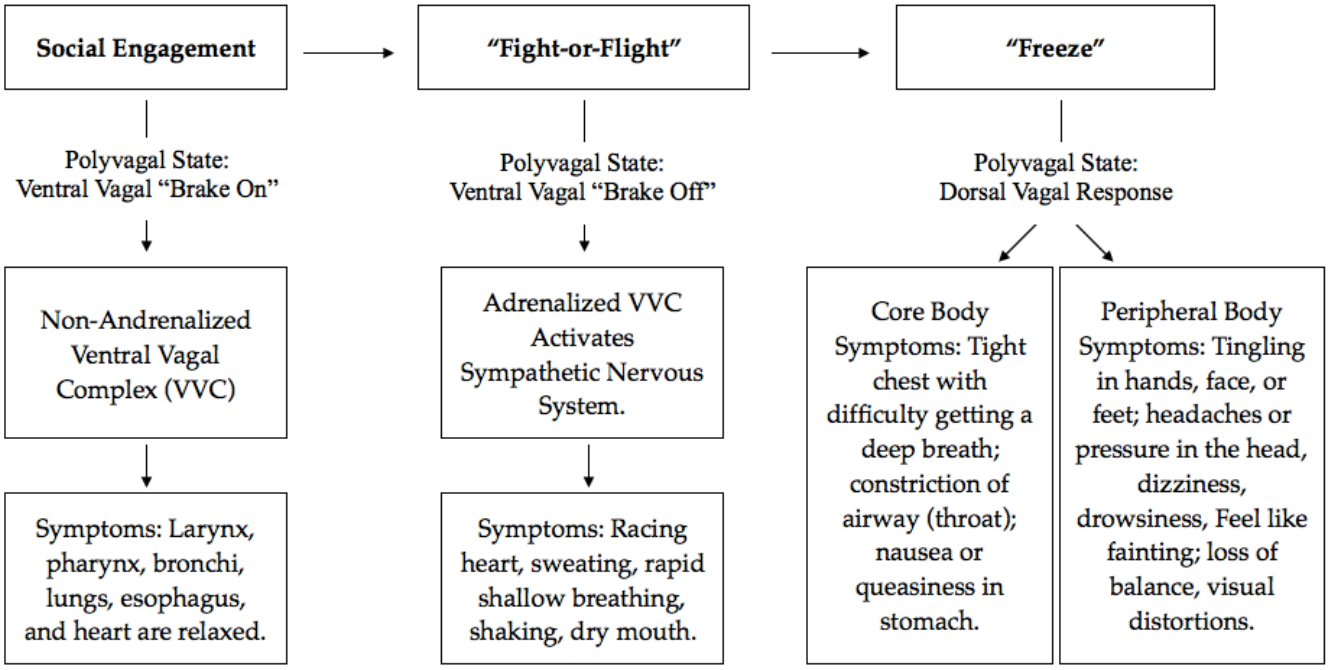
APPENDIX A: Research Design Diagram

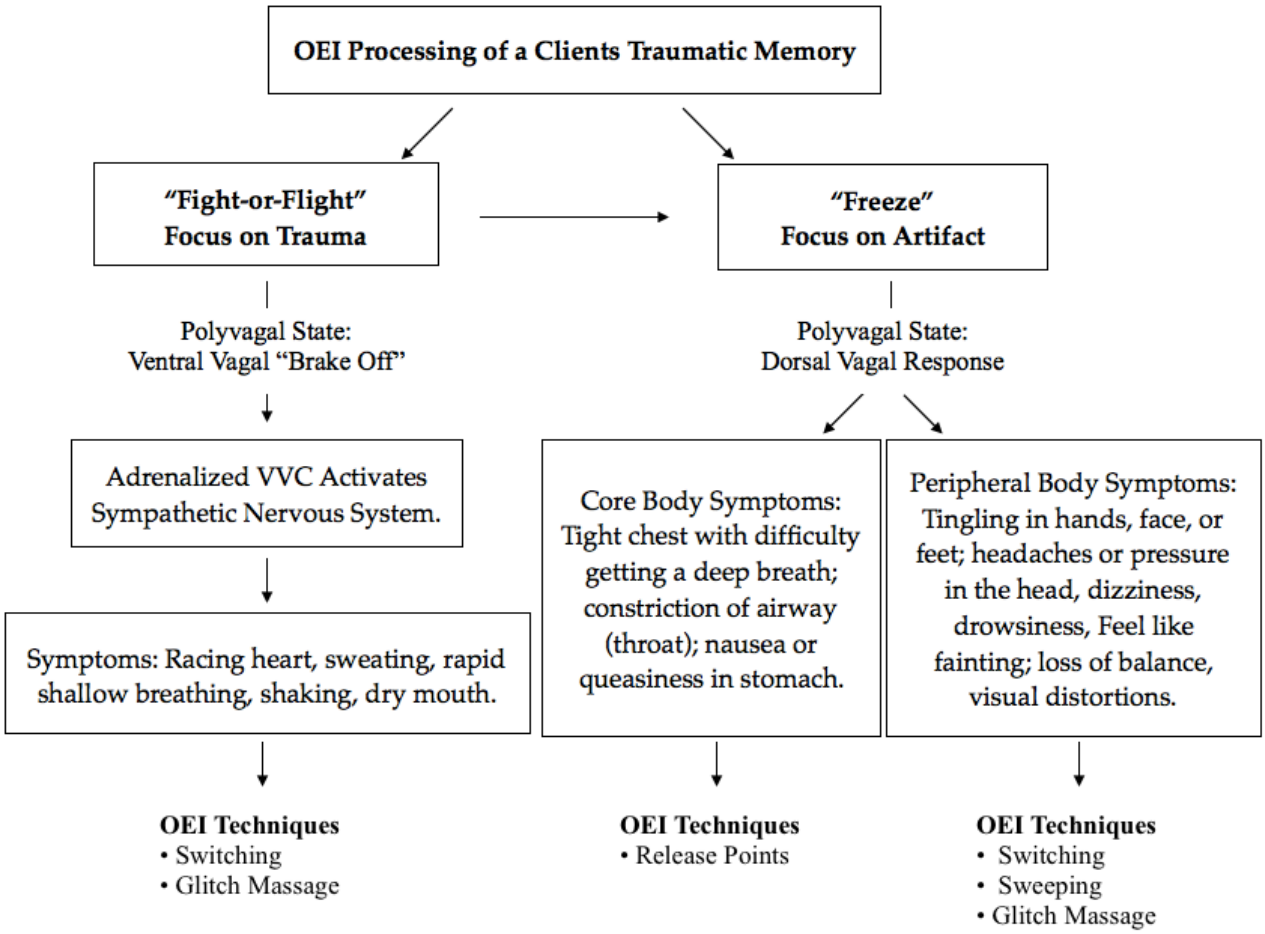
Please note that this diagram includes research design aspects which are beyond the scope of this thesis document but which will be included in future reports on this data.



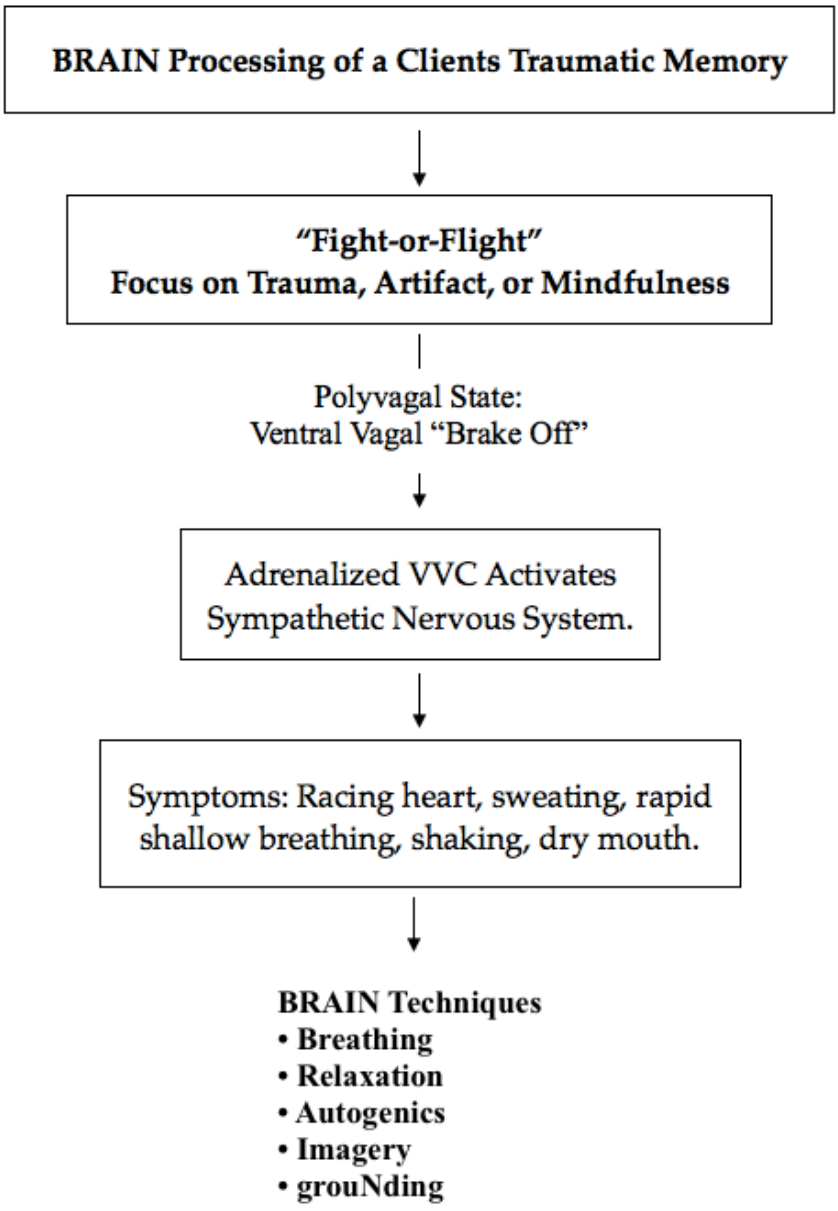
APPENDIX B: Polyvagal Theory Diagram



APPENDIX C: Polyvagal Theory Applied to OEI Treatment Diagram



APPENDIX D: Polyvagal Theory Applied to BRAIN Treatment Diagram



Appendix E: A Conceptual/Theoretical Summary of OEI

Prepared by

Dr. Rick Bradshaw

(February 2017)

Observed and Experiential Integration (OEI) can be considered from a number of theoretical perspectives (Bradshaw, Cook, & McDonald, 2011). In this brief review, the major theoretical lenses through which OEI can be understood are presented, starting with a Behavioural/ Neurobiological lens, because it is so foundational to understanding how and why OEI "works".

Behavioural/Neurobiological

It is believed that interoceptive states associated with amygdaloid arousal become classically conditioned with relative states of tension in the extraocular and intraocular muscles of trauma survivors (including the left and right levator palpebrae superioris muscles which raise and lower the eyelids). This is achieved through the mechanism of ocular proprioception. Proprioceptive neurons, which exist in large numbers and high densities in the muscles of the eyes and the neck, send messages back to the brain indicating the relative positions and movements of the eyes. Intraocular muscles that constrict and dilate the pupil, and adjust tension in the lenses of the eyes, send messages that indicate whether people or objects were approaching or moving away (and the distances from the eyes of those people and objects) at the times trauma survivors were most overwhelmed (i.e., in states of amygdaloid arousal).

When trauma survivors revisit the times in their lives when they were most overwhelmed (i.e., when their bodies were adrenalized) by thinking about the faces of people, scenes or places,

and even somato-affective states, their eyes typically respond by blinking, halting, or skipping in response to movement sequences guided by therapists. In this way, clients and their therapists can identify movement patterns, locations in the visual fields, and distances from the eyes, that are now (and were then, during traumas) associated with physical and emotional intensity. By guiding the eyes in directions opposite to those associated with the original traumas, typically the intensity that patients experience diminishes in a matter of minutes or hours (depending on how early and how intense these experiences were).

In the 68-page foundational article on OEI (Bradshaw, Cook, & McDonald, 2011), other neurobiological mechanisms are suggested for the remaining four sets of OEI techniques.

Psychoanalytic/Psychodynamic

The neurobiological/behavioural foundation of OEI theory is supplemented by assimilation of a number of psychoanalytic/psychodynamic concepts. Recently, there have been entire psychotherapies based on exploration and resolution of transference reactions. One evidence-based therapy for treatment of patients with personality disorders is known as "Transference-Focused Psychotherapy" (Yeomans, Clarkin, & Kernberg, 2002). It is based on years of theoretical work by object relations therapist Otto Kernberg (Clarkin, Yeomans, & Kernberg, 1999; Kernberg, Selzer, Koenigsberg, Carr, & Appelbaum, 1989; Koenigsberg, Kernberg, Stone, Appelbaum, Yeomans, & Diamond, 2000).

During early applications of OEI, it was discovered that many patients with early and severe abuse and neglect manifested negative transference reactions toward their therapists. These can be detected by having patients simply cover one of their eyes and look at the therapist, and then switch to cover the other eye and compare their perceptions of the therapist. It is not unusual, particularly in patients with personality disorders, to see major differences in the visual

perceptions that clients have of their therapists, depending on which I is covered. Typically, this manifests as differences in perceived physical distance from the therapist, and/or differences in appearance of the therapist (e.g., critical and angry with one eye open, but accepting and warm with the other eye open). In extreme cases, the therapist may appear to have no face with one eye open, or to appear as if she or he is a past abuser).

Therapeutically, the great benefit of OEI is that these negative transference reactions can usually be quickly resolved in a matter of minutes, simply by continuing to switch between covering the left and right eyes. This procedure has been extended to couples therapy, and even to resolution of distorted body image with mirror work for patients afflicted with eating disorders.

It is certainly not difficult to appreciate the value of such procedures, as they improve the therapeutic relationship (i.e., remove perceptual distortions that prevent experiences of trust and caring with the therapist). So much research has been done that clearly demonstrates the centrality of therapeutic rapport to treatment outcome (explaining approximately 65% of the variance in treatment outcome). One of the primary researchers and writers associated with this foundation in psychotherapeutic effectiveness is John Norcross (2010).

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APPENDIX F: Participant Background Information

The following information is to provide descriptive data about the participants in this study.

1) What is your sex? Please circle.

   Male Female

2) What is your gender (if different from above)?

3) What is your Age? Please write your date of birth (month/day/year) as well.

4) What is your Ethnicity?

5) What is your Culture?

6) What is your religious affiliation?

7) What is your highest level of education? Please circle.

   ___ Less than Grade 10 ___ Bachelors Degree

___ Completed Grade 10 ___ Masters Degree

___ High School Graduate or GED ___ Ph. D, Doctorate, M.D.

___ Some College/Associate Degree/Diploma ___ Other: _____

8) What is your occupation?

9) Are you currently taking any medication? Please list below, including purposes.

_____

_____

10) Have you ever been hospitalized for mental health reasons? _____

Electroencephalographic Information

The following information will provide direction for the psychophysiological assessments.

1) Dominant hand (circle)? Right Left
2) Dominant eye (circle)? Right Left
3) Nasion to Inion measurement? _____
4) 50% of this for Nasion to Cz _____
5) 10% of 3) above (for 10-20) _____
6) 2 x 5) above (20% of 3) above _____

(Please Tear off This Portion of the Page and Refer to it Before Assessments)

During electroencephalographic assessments, it is important for the electrodes (sensors on scalp) to make good contact. For this reason, please **avoid use of hair sprays and gels** on assessment days.

In addition, please avoid drinking beverages or eating foods that contain caffeine (coffee, tea, chocolate) for 2 hours before assessments.

Thank you for your cooperation with these procedures.

APPENDIX G: Dissociative Experiences Scale

Eve Bernstein Carlson, Ph.D. Frank W. Putnam, M.D.

DIRECTIONS

This questionnaire consists of twenty-eight questions about experiences that you may have in your daily life. We are interested in how often you have these experiences in your daily life. It is important, however, that your answers show how often these experiences happen to you when you are not under the influence of alcohol or drugs. To answer the questions, please determine to what degree the experience described in the question applies to you and mark the line with a vertical slash at the appropriate place, as shown in the example below.

Example:

0% l…..../.....l 100%

Date:_____ Age: _____ Sex: M F _____

1. Some people have the experience of driving a car and suddenly realizing that they don't remember what has happened during all or part of the trip. Mark the line to show what percentage of the time this happens to you.

   0%.....100%

2. Some people find that sometimes they are listening to someone talk and they suddenly realize that they did not hear part or all of what was said. Mark the line to show what percentage of the time this happens to you.

   0%.....100%

3. Some people have the experience of finding themselves in a place and having no idea how they got there. Mark the line to show what percentage of the time this happens to you.

   0%.....100%

4. Some people have the experience of finding themselves dressed in clothes that they don't remember putting on. Mark the line to show what percentage of the time this happens to you.

   0%.....100%

5. Some people have the experience of finding new things among their belongings that they do not remember buying. Mark the line to show what percentage of the time this happens to you.

   0%.....100%

6. Some people sometimes find that they are approached by people that they do not know who call them by another name or insist that they have met them before. Mark the line to show what percentage of the time this happens to you.

   0%.....100%

7. Some people sometimes have the experience of feeling as though they are standing next to themselves or watching themselves do something and they actually see themselves as if they were looking at another person. Mark the line to show what percentage of the time this happens to you.

   0%.....100%

8. Some people are told that they sometimes do not recognize friends or family members. Mark the line to show what percentage of the time this happens to you.

0%.....100%

9. Some people find that they have no memory for some important events in their lives (for example, a wedding or graduation). Mark the line to show what percentage of the time this happens to you.

0%.....100%

10. Some people have the experience of being accused of lying when they do not think that they have lied. Mark the line to show what percentage of the time this happens to you.

0% …… 100%

11. Some people have the experience of looking in a mirror and not recognizing themselves. Mark the line to show what percentage of the time this happens to you.

0% ……100%

12. Some people have the experience of feeling that other people, objects, and the world around them are not real. Mark the line to show what percentage of the time this happens to you.

0% ……100%

13. Some people have the experience of feeling that their body does not seem to belong to them. Mark the line to show what percentage of the time this happens to you.

0% ……..100%

14. Some people have the experience of sometimes remembering a past event so vividly that they feel as if they were reliving that event. Mark the line to show what percentage of the time this happens to you.

0%.....100%

15. Some people have the experience of not being sure whether things that they remember happening really did happen or whether they just dreamed them. Mark the line to show what percentage of the time this happens to you.

0%.....100%

16. Some people have the experience of being in a familiar place but finding it strange and unfamiliar. Mark the line to show what percentage of the time this happens to you.

0%.....100%

17. Some people find that when they are watching television or a movie they become so absorbed in the story they are unaware of other events happening around them. Mark the line to show what percentage of the time this happens to you.
    0%.....100%

18. Some people find that they become so involved in a fantasy or daydream that it feels as though it were really happening to them. Mark the line to show what percentage of the time this happens to you.

    0%.....100%

19. Some people find that they sometimes are able to ignore pain. Mark the line to show what percentage of the time this happens to you.

    0%.....100%

20. Some people find that they sometimes sit staring off into space, thinking of nothing and are not aware of the passage of time. Mark the line to show what percentage of the time this happens to you.

    0%.....100%

21. Some people sometimes find that when they are alone they talk out loud to themselves. Mark the line to show what percentage of the time this happens to you.
    0%.....100%

22. Some people find that in one situation they may act so differently compared with another situation that they feel almost as if they are two different people. Mark the line to show what percentage of the time this happens to you.

    0%.....100%

23. Some people sometimes find that in certain situations they are able to do things with amazing ease and spontaneity that would usually be difficult for them (for example, sports, work, social situations, etc.). Mark the line to show what percentage of the time this happens to you.

    0%.....100%

24. Some people sometimes feel that they cannot remember whether they have done something or have just thought about doing that this (for example, not knowing whether they have just mailed a letter of have just thought about mailing it). Mark the line to show what percentage of the time this happens to you.
    0%.....100%

25. Some people find evidence that they have done things that they do not remember doing. Mark the line to show what percentage of the time this happens to you.

0%.....100%

26. Some people sometimes find writings, drawings, or notes among their belongings that they must have done but cannot remember doing. Mark the line to show what percentage of the time this happens to you.

0%.....100%

27. Some people sometimes find that they hear voices inside their head that tell them to do things or comment on things they are doing. Mark the line to show what percentage of the time this happens to you.

0%.....100%

28. Some people sometimes feel as if they are looking at the world through a fog so that people and objects appear far away or unclear. Mark the line to show what percentage of the time this happens to you.

0%.....100%

To score: Add percentages from all the questions together and divide by 28.
If score is > 25 < 40 = BPD range.
If score is > 40 = DID (MPD) range.

But …. Actual dissociation could be much higher than reported due to client's lack of awareness re: his/her own dissociation. In these cases you will usually see evidence of in it the oral administration.

APPENDIX H: Personal Report of Confidence as a Speaker

This instrument is composed of 30 items regarding your feelings of confidence as a speaker. After each question there is a "true" and "false." Try to decide whether "true" or "false" most represents your feelings associated with your most recent speech, then put a circle around the "true" or "false." Remember this information is completely confidential and will not be made known to any professors. Work quickly and don't spend much time on any one question. Your first impression is what counts.

T	F	I look forward to an opportunity to speak in public.
T	F	My hands tremble when I try to handle objects during a speech.
T	F	I am in constant fear of forgetting my speech.
T	F	Audiences seem friendly when I address them.
T	F	While preparing for a speech I am in a constant state of anxiety.
T	F	At the conclusion of a speech I feel that I have had a pleasant experience.
T	F	I dislike to use my body and voice expressively.
T	F	My thoughts become confused and jumbled when I speak before an audience.
T	F	I have no fear facing an audience.
T	F	Although I am nervous just before getting up to give a speech.
T	F	I face the prospect of making a speech with complete confidence.
T	F	I feel that I am in complete possession of myself while speaking.
T	F	I prefer to have notes with me in case I forget my speech.
T	F	I like to observe the reactions of my audience to my speech.
T	F	Although I talk fluently with friends I am at a loss for words when giving a speech.
T	F	I feel relaxed and comfortable while speaking to an audience.
T	F	Although I do not enjoy speaking in public I do not particularly dread it.
T	F	I always avoid speaking in public if possible.
T	F	The faces of the audience are blurred when I look at them.
T	F	I feel disgusted with myself after trying to address a group.
T	F	I enjoy preparing a talk.
T	F	My mind is clear when I face an audience.

T	F	I am fairly fluent.
T	F	I perspire and tense all the while I am speaking before an audience.
T	F	My posture feels strained and unnatural when speaking to an audience.
T	F	I am fearful and tense all the while I am speaking before a group.
T	F	I find the prospect of speaking before a group mildly pleasant.
T	F	It is difficult for me to calmly search my mind for the right words to express my thoughts in front of a group.
T	F	I am terrified at the thought of speaking before a group.
T	F	I have a feeling of alertness in facing a group.

APPENDIX I: Trauma Scene Form

(for Script-Driven Symptom Provocation)

We would like you to write a description of the most traumatic event you have experienced in your life associated with public speaking. We may ask you more detail about this experience later.

If you find it difficult to think of something to write, it may help to close your eyes and imagine yourself back in the situation. Try to generate the same sensations and feelings that you experienced at the time. While the image is vivid in your memory, jot down the details of the scene and the sensations you experienced at the time. Also, on the next page are bodily experiences you may have had; please circle any that apply.

Describe the traumatic situation. Include such details as when it happened (age and date), where you were, who was there (names), what you were doing, how things looked, what you heard, what you were feeling, etc. Please do not guess or include anything about which you are not positive.

Please write things in the order they happened, and include bodily sensations from the next page at the appropriate times (turn the page to that first). Continue your description on the reverse side of this page if necessary.

Listed below are a number of bodily sensations that people may experience in various situations. Please circle all of the responses that you experienced in the situation you described, and include several in your description.

heart stops
feel relaxed all over
tension in forehead
constriction in chest
shallow breathing
pant
stomach is in a knot
laboured breathing
nauseous
tension in forehead
heart pounds
heart quickens
beads of perspiration
feel warm
grit my teeth
tension in the arms
body feels heavy
tightness in the face
whole body shakes

feel tense all over
butterflies in stomach
cramps in stomach
tension in back
breath slower
clenched jaw
gasping for air
tension in the arms
feel tense all over
tightness in the face
heart beats slower
feel sweaty
sweat pours out
clenched fist
clenched jaw
flushed face
eye twitches
hands trembling
blood rushing to head

jittery
calm
clenched fist
breath faster
grit my teeth
feel relaxed all over
heart skips a beat
feel restless
head pounds
hands trembling
heart races
palms are clammy
arms & legs warm and relaxed
tension in back
feel hot all over
eyes water
eyes burn
eyes wide open

APPENDIX J: EEG and EDA Protocol

Electroencephalogram and Electrodermal Activity Assessment Script

The exact sequence of recording sites and activities, in the Electroencephalogram and Electrodermal ActivityAssessment script, are as follows. All measurements within each task are gathered during the same one minute period the task runs. Each assessment is 3 minutes in total.

Baseline Assessment

Task 1
Channel C: C4: Eyes Open (1 minute)
Channel D: T4: Eyes Open (1 minute)
Channel E: E1 & E2: Eyes Open (1 minute)

Task 2
Channel C: C4: Eyes Open (1 minute)
Channel D: T4: Eyes Open (1 minute)
Channel E: E1 & E2: Eyes Open (1 minute)

Task 3
Channel C: C4: Eyes Open (1 minute)
Channel D: T4: Eyes Open (1 minute)
Channel E: E1 & E2: Eyes Open (1 minute)

Symptom Provocation Assessment

Task 1
Channel C: C4: Eyes Open (1 minute)
Channel D: T4: Eyes Open (1 minute)
Channel E: E1 & E2: Eyes Open (1 minute)

Task 2
Channel C: C4: Eyes Open (1 minute), play Script Driven Symptom Provocation Audio Track
Channel D: T4: Eyes Open (1 minute), play Script Driven Symptom Provocation Audio Track
Channel E: E1 & E2: Eyes Open (1 minute), play Script Driven Symptom Provocation Audio Track

Task 3
Channel C: C4: Eyes Open (1 minute)
Channel D: T4: Eyes Open (1 minute)
Channel E: E1 & E2: Eyes Open (1 minute)

APPENDIX K: Timed Behavioural Checklist

Behaviour Observed	Time Period								
	1	2	3	4	5	6	7	8	Σ
1) Paces									
2) Sways									
3) Shuffles feet									
4) Knees tremble									
5) Extraneous arm/hand motion									
6) Arms rigid									
7) Hands restrained									
8) Hand tremors									
9) No eye contact									
10) Face muscles tense									
11) Face “deadpan”									
12) Face pale									
13) Face Flush									
14) Moistens lips									
15) Swallows									
16) Clears throat									
17) Breathes heavily									
18) Perspires									
19) Voice quivers									
20) Speech blocks or stammers									
21) Rate changes									
22) Topic Changes									
Total:									

APPENDIX L: Recruitment Poster

Does Public Speaking Anxiety get in the way of Your Academic, Career, or Social Success?

Does your heart race at the thought of talking in front of a room of eager listeners?

Have you felt dizzy or light-headed while desperately trying to keep your place in a presentation?

Are you nervous about what the audience will think of you if you make a mistake?

Participate in this study and **receive free treatment** for public speaking anxiety!

Contact:

Speak with the Principal Investigator in November or December and learn more!

Public speaking anxiety is exceptionally common, affecting one third of the general population.

Observed & Experiential Integration (OEI) is a new treatment for psychological trauma which has been subjected to two randomized controlled trials and found to be an effective treatment for Posttraumatic Stress Disorder (PTSD). In years of clinical practice, OEI has been used successfully to treat public speaking anxiety (usually in 1-7 sessions). A collection of calming and grounding techniques, known has "BRAIN" (Breathing, Relaxation, Autogenics, Imagery, and grouNding) has also been found to be effective for reducing the symptoms of PTSD.

To follow up these promising clinical observations and findings, the proposed study constitutes a formal investigation of OEI and BRAIN, to treat public speaking anxiety.

APPENDIX M: Informed Consent Form

Confidence to be Heard: An efficacy pilot study using Observed and Experiential Integration (OEI) for the treatment of anxiety related to public speaking

Investigators

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Ya-Chun Chi
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Purpose of the Project

Public speaking anxiety is exceptionally common, affecting one third of the population in community surveys (Kessler, Stein, & Berglund, 1998; Stein, Walker, & Forde, 1996). Observed & Experiential Integration (OEI) is a new treatment for psychological trauma (Bradshaw, Cook, & McDonald, 2011) which has been subjected to two randomized controlled trials (Bradshaw, McDonald, Grace, Detwiler, & Austin, 2014; Bradshaw, McDonald, Williams et al., in preparation) and found to be an effective treatment for Posttraumatic Stress Disorder (PTSD). Another treatment that has been found to be effective for reducing PTSD is referred to as "BRAIN", which stands for: Breathing, Relaxation, Autogenics, Imagery, and grounding. In years of clinical practice, OEI and BRAIN have been used successfully to treat public speaking anxiety (usually in 1-7 sessions). To follow up these promising clinical observations, this study constitutes the first formal investigation of OEI to treat public speaking anxiety. Behavioural (actual public speaking analysis) and psychophysiological (brainwave and skin conductance) evaluations will supplement self-report (questionnaire and interview) measures.

Procedures

There will be two phases in the project:

1. Treatment #1 – 2-hour small group information/practice session followed by seven individual sessions;
2. Treatment #2 – 2-hour small group information/practice session followed by seven individual sessions;

You will be randomly assigned to one of two groups: 1) Treatment #1 first, or 2) Treatment #2 first. You will complete pretreatment, posttreatment I, and posttreatment II assessments. At each assessment, you will deliver a short (5-minute) prepared speech to a small audience (up to four people), and the video recordings of those talks will be analyzed for specific behaviours. During each assessment period, you will also complete two quantitative electroencephalographic assessments to assess brainwave activity, and two palmar electrodermal activity assessments (a) when relaxed, and (b) when anticipating giving a short speech. These evaluations simply involve measuring tiny electrical signals from your scalp and from the palm of one of your hands. During the evaluations just prior to giving a short speech, you will also listen to a short (50-second) audio recording from your own description of an event earlier in your life that was very stressful and involved public speaking. Assessments will also include paper-and-pencil questionnaires, and short interviews. Assessments will be delivered by trained individuals who are unaware of which treatment group you have been assigned to, so ***it will be very important during the assessments not to talk about (describe or name) the treatments you have received with the assessors***.

Confidentiality

Your identity, and all of your scores, will be kept confidential. Only the Investigators and Research Assistants will have access to this information. The one exception to this assurance involves attendance at the two 2-hour psychoeducational group sessions which you will attend with five other participants in the study. Even though all participants are assuring that they will not disclose the identities of other participants, this cannot be guaranteed by the investigators in this research study. You may choose to use a pseudonym during that group time if you are uncomfortable using your own first name. All researchers and research assistants who have access to your confidential information will sign a confidentiality agreement to keep your identity and all of your information confidential. All hard copies of data will be kept in a locked file cabinet in a locked room in a secure (locked at night) building. All digital copies of data will be stored in a password-protected file on a password-locked computer. After analysis of video recordings of speech tasks and assessment sessions involving brainwave recording, those video recordings will be deleted, and your data will only be saved by participant number. The intention is to keep the data in that form for ongoing analysis over a period of 10 years from completion of the data collection portion of the study.

Information disclosed in assessment and therapy sessions is confidential, with the following exceptions: Threat to self (suicide risk); Threat to other (homicide risk and duty to warn); Suspicion of child abuse; Intent to drive a motor vehicle while intoxicated by alcohol or drugs; or Intent to have unprotected sexual contact or share IV drug needles, when infected by HIV and/or diagnosed with AIDS; and court subpoena of records.

Time Commitment

In addition to the phases mentioned above, there are several *stages* in this study.

The initial stage constitutes the screening process, during which a series of self-report instruments will be used to decide eligibility for the study. This portion should take roughly an hour plus any time spent asking questions of, or responding to questions from, Research Assistants.

Each assessment period will take approximately 4-7 hours, spread over two days.

The group receiving Treatment #1 first, will receive a 2-hour psychoeducational session about Treatment #1, with time to practice those skills. The group receiving Treatment #2 first, will receive a 2-hour psychoeducational session about Treatment #2, with time to practice those skills.

You will then receive seven hours of individual treatment sessions.

A second assessment period will follow, which will include a series of interview questions in addition to all of the measures used in the pretreatment assessment period.

You will then receive a 2-hour psychoeducational session about the second treatment, followed

by seven hours of individual therapy with the second treatment (which will differ, depending on which group you have been assigned to).

Finally, there will be a second posttreatment assessment period, during which you will be asked a series of interview questions about your views on the therapy you have received, and the other assessment instruments and procedures from the pretreatment assessment.

At the end of the study, you are encouraged (but not required) to book an appointment with a research team member for a debriefing meeting. These appointments typically last an hour.

These stages add to a time commitment of 35 hours spread over four months from January 2016 through April 2016.

Potential Discomfort

Since one of the treatments (OEI) involves movement of the eyes, if you suffer from any eye-related condition that could be aggravated by eye movement (including brain surgery in the area of the eyes) it will be important to inform your OEI therapist in the study, who can consult with your ophthalmologist for his/her approval before proceeding with these techniques.

As with any therapy involving assessment or treatment of anxiety or stress, you may experience psychological distress at some point as you recall events, people, and situations that upset you. During OEI we try to keep this distress as low as possible (moderate) while still allowing you to process the traumas that disturb you. You will be asked to focus on those events, or on current feelings that are distressing, while you have both eyes open, and also while you have each eye open separately.

During these OEI procedures, people sometimes experience transient symptoms such as headaches, visual distortions, and stomach or chest tension. These generally fade within 30-60 minutes, and more often within 5 minutes. In addition, it is possible that recall of upsetting incidents will trigger numbing symptoms, such as feeling drowsy, light-headed, or tingling in your hands, face, or feet. Again, such symptoms normally subside within 30-60 minutes and more commonly within 5-10 minutes.

Based on clinical experience, these procedures are effective for reducing anxiety and stress symptoms. It is reasonable to alleviate the intensity of many of your symptoms in 7 sessions, but if you have had *many* previous traumatic experiences, or if you have an extensive mental health history (e.g., hospitalization, suicidality, or bipolar disorder) you should not expect *all* of your psychological symptoms to be gone in such a relatively short course of treatment. For this reason, it is very important to describe your mental health history, provide contact information for other health and mental health professionals from whom you have received care recently, and (at some point early in your treatment) sign a consent form for exchange of information between providers who may be addressing your psychological symptoms (e.g., psychologist, psychiatrist, other counsellor, or GP physician.

Benefits for You

This is an opportunity to work through experiences which cause public speaking anxiety with a skilled therapist, free of charge. The effects of this study are expected to improve your life by helping you to process anxiety related to public speaking, and enable you to enter skill-based programs (like Toastmasters) or to learn public speaking skills. In the long run, this could improve your employment status, future education, income, and even satisfaction with your own abilities and goal achievement.
You will also receive training in relaxation and grounding techniques which can help you manage stress in this, and other areas, of your life.

Further Information

If you have any questions or desire further information with respect to this study, you may contact Stephanie Hall or one of her associates at stephanie.hall@mytwu.ca.

If you have any concerns about your treatment or rights as a research participant, you may contact Ms. Sue Funk in the Office of Research, Trinity Western University at 604-513-2142 or sue.funk@twu.ca.

Even after you consent to participate in this study by signing below, you may choose to stop doing OEI or any other treatment, at any time, without consequence. In order to withdraw from the study you must simply notify the Principal Investigator, Stephanie Hall, in writing. Your signature below affirms that you have read and understood the description of the therapy, and you willingly consent to the use of these procedures to reduce your posttraumatic distress related to public speaking anxiety and other anxiety-related problems.

If you withdraw from the study, data collected from you will be stored in the same confidential way described earlier in this consent form.

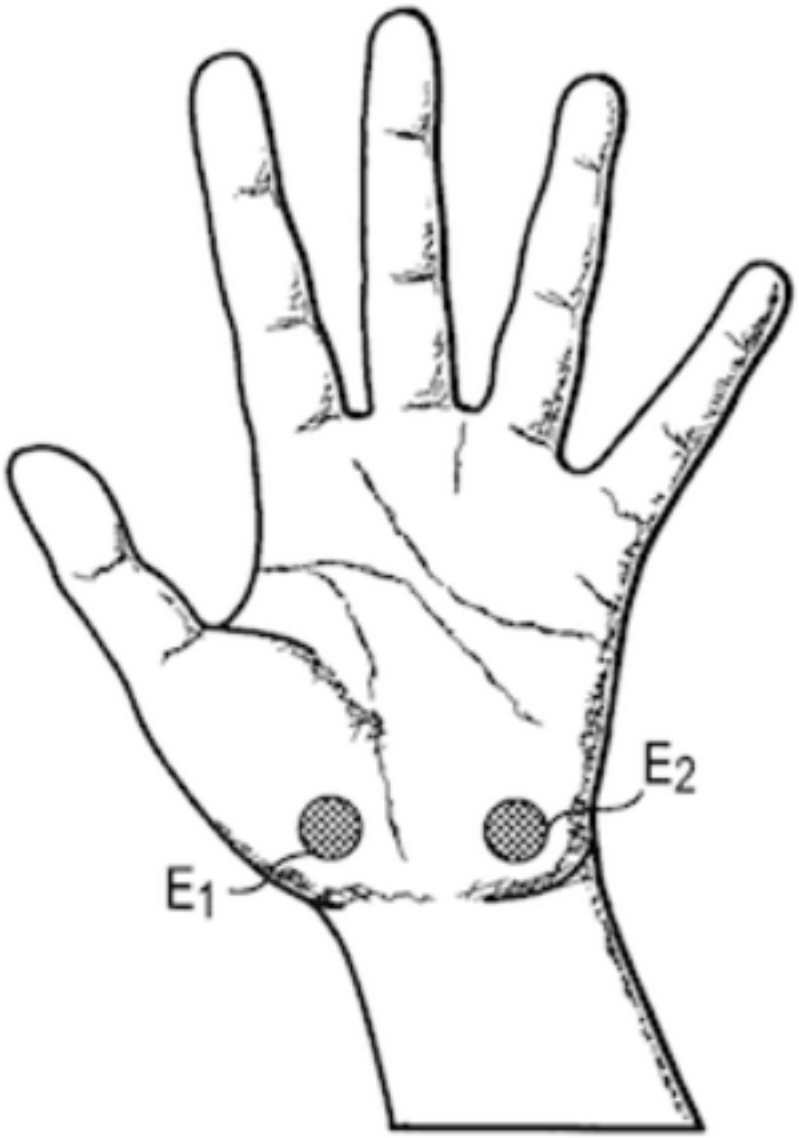
Your signature below indicates that you have had your questions about the study answered to your satisfaction, and have received a copy of this consent form for your own records.

Your signature indicates that you consent to participate in this study, and that your responses may be put in anonymous form and kept for further use for 10 years, after the completion of this study.

Name: _____ Date: _____

Witness: _____ Date: _____

APPENDIX N – Palm Electrode Placement



APPENDIX O: OEI Power Point Information

Observed & Experiential Integration (OEI): To Resolve Public Speaking Anxiety

Audrey Cook, MPhil
Rick Bradshaw, PhD

Public Speaking Anxiety Starts with Relational Trauma:

a. Criticism & Rejection
b. Humiliation/Embarassment
    i. Presentations in Classes
    ii. Recitals & Performances
    iii. Team or Club Activities
    iv. First Group: Starting School

Now gets triggered:
- Standing up front
- Faces of Many People
- Eyes Looking at You
- Any Performance
- Authority Figures

Trauma Is…
Negative Unexpected Makes You Feel:
Powerless, Confused, or Out of Control

Broca's Area: Speech Production

Limbic & Paralimbic Structures
- The parts of the brain most involved in producing intense symptoms, like:
- Panic, flashbacks, startle response, nausea, and throat or chest constriction
- Are not directly affected by talking or listening

Limbic System: Midbrain

Anterior Cingulate Gyrus

5 Building Blocks of OEI
Level I Techniques
- Switch
- Sweep
- Release Points

Level II Techniques
- Glitch Hold
- Glitch Massage

Core Trauma vs Dissociative Artefacts
CORE TRAUMA SYMPTOMS (Fight, Flight, or Freeze)
- Constriction in Throat (Airway)
- Bronchoconstriction in Chest
- Nausea or Queasiness in Stomach
- Racing Heart Rate, Rapid Breathing, Perspiration, Shaking, Fear/Anxiety

*Note that all of these symptoms are experiencedin the core of the body…(hence CORE

DISSOCIATIVE ARTEFACTS (Side Effects of Processing Intensity)
- Headaches & Pressure in the Head
- Visual Distortions, Blocks, & Blurring
- Dizziness, Drowsiness, Loss of Balance
- Tingling & Numbness in the Hands, Face, & Feet
- Yawning
- Sinus Pressure

Video Demo – Public Speaking
- Switching to reduce trauma intensity
- Glitch massage to resolve points of intensity, using the eyes to access past relational traumas

Examples - Transference
- Audience Member Faces
- Group Leaders
- Photographs
- Mirrors

Eye Dominance Check
Arms Length, Two Fingers Vertical, Both Eyes Open
Line up vertical fingers with straight edge in distance
Without moving fingers, close one eye, then open it
Without moving fingers, close the other eye, then open it
Which eye was open when the straight edge was in line?

Many people report: higher levels of shock/fear/anxiety with their dominant eye open higher levels of sadness/despair/hopelessness with the other eye open

Activity: Try This in Pairs
Transference Check & Clearance
- Proximity: Notice how far away I appear to you
- Appearance: Notice how I look to you (color, expression)
- Body/Emotion: Notice how you feel physically & emotionally
- Cognitive Proj: Notice whether it seems like I'm on your side…

Try sitting, standing, different people (gender, race, age, etc.)
Try moving a small amount closer, further away, diff. angles

Polyvagal Theory: Stephen Porges (2001/2007) 3 Response Levels
Social Connection - Ventral Vagal Brake "On"

Fight-or-Flight - Ventral Vagal Brake "Off" (SNS)
Freeze - Dorsal Vagal Complex – (DVC)

Coactivation of SNS & PNS
- "Tonic Immobility" = co-activation of Sympathetic & Parasympathetic Nervous Systems
- In "Freeze" response, frequently changing pupil widths and increases in pulse rate from 60-70 to 110-120 ppm
- Childhood sexual abuse = 50%
- Sexual assault victims 35-40 % some immobility

Classical Conditioning of Trauma

Ocular Proprioception: Angle/Direction/Movement Pattern
Proprioceptors = Nerve cells in muscles sending signals to the brain about muscle positioning.

Exist in large numbers and high densities in 6 muscles outside the eyes that control the movements of each eye & the neck.

Individual cells fire in response to eye movements tracking objects. Curved movements start from a different area of the brain than straight vertical, horizontal, or diagonal eye movements.

Vertical Location in Visual Fields

Occular Proprioception
String demo
"Like pulling out a sliver"

Ocular proprioception - Distance
Muscles inside the eyes control:
- Curve & thickness of lenses
- Constriction & dilation of pupils.

What you:
- Sense in your body
- Hear
- See
- Smell
- Feel emotionally

Gets associated into patterns that occurred during events, that are recorded in the brain, then retrieved & re-mapped on muscles when you recall those events – creating "glitches".

Live Demo

Therapist will comment on breathing, reddening of eyes (Social Biofeedback, Attunement)
Glitch "massage" w distal pulls & other movement patterns
Resolutions of Intensity with "Switching" & "Glitch Work":

- "Glitch Work", like running the water into the sink from the tap
- "Switching", like pulling the plug and draining the sink of water

Proximal-distal

- Usually massaging toward the eyes triggers abuse
- Sometimes massaging away triggers abandonment
- Track across the visual field until you see a "glitch"
- Then move vertically until you see another halt or skip
- Then pull out of the centre of that "cross-hair" (+)
- Keep going until you feel a fluttering of the eyes
- There is often a breath release and shoulder drop
- Sometimes there is an emotional release as well

Release Points

Peak Performance & Homework

Use OEI Techniques at Home or at Work --- on Yourself!

- Think about public speaking in front of an audience.
- Focus on the images and sounds in your mind vividly.
- If necessary, talk out loud about the situation you face!
- When you feel physical & emotional intensity, Switch (eyes)
- Stay longer with the eye open that's LESS INTENSE, then Switch
- Another way: Vividly imagine what you want to be able to do…
- Notice what gets in the way (thoughts, emotions, sensations)
- Focus on those blocks and Switch or do Glitch Work on yourself

More Info on OEI

Visit our Web site for FAQ videos, books, seminars, resources, memberships, Web site listing of clinicians, research summaries, information on OEI publications

www.sightpsychology.com

APPENDIX P: OEI Homework Exercises

OEI Homework Exercises

A.

Already Intense & Thinking About Anxiety

- Think about public speaking in front of an audience.
- Focus on the images and sounds in your mind ***vividly***.
- If necessary, ***talk out loud*** about the situation you face!
- When you feel physical & emotional intensity, ***Switch*** (eyes)
- Stay longer with the eye open that's LESS INTENSE, then ***Switch***

B.

"Peak Performance" Approach to OEI Targets

- Vividly imagine what you ***want*** to be able to do…(verbally fluid, confident)
- Notice ***what gets in the way*** of that goal (thoughts, emotions, sensations)
- ***Focus on those blocks*** or interferences and ***Switch*** or do ***Glitch Work***
- Go back to ***A.*** (Above) to pull down the intensity of the interferences

---

Remember…

- When you're already intense (anticipational anxiety), cover your **dominant** eye
- **Wait** until intensity subsides and you get a spontaneous breath release, then…
- Return briefly to the dominant eye (open), feel the intensity and **Switch** again

If:

- You get headaches, head pressure, tingling & numbness (hands/face/feet)

Or:

- Visual side effects (blurring, grey or black blobs in visual fields, double vision)

Then:

- **Focus on side effects** and **Switch** (eyes) **or Sweep** (from ears toward nose)

APPENDIX Q: Helpful Aspects of Therapy Questionnaire (HAT)

Name (pseudonym): _____ Date _____

Thank you for taking the time to fill in the information requested on this form. Please note that you have the right to choose not to share any information that you choose not to share, and the right to withdraw your participation from this study.

1. Of what happened in this session, what do you feel was the most helpful or important for you? (By that we mean something that happened in the session. It might be something you said or did or something the therapist said or did.)

2. Please explain what made this event helpful/important and what you got out of it.

3. How helpful was this particular event? Rate it on the following scale. (Put an "X" at the appropriate point; half-point ratings are OK; e.g., 7.5.)

4. About where in the session did this event occur?

5. About how long did the event last?

6. Did anything else particularly helpful happen during this session?

☐ Yes ☐ No

a) If yes, please rate how helpful this event was: ☐ Slightly helpful

☐ Moderately helpful

☐ Greatly helpful

☐ Extremely helpful

b) Please describe the event briefly:

7. Did anything happen during the session that might have been hindering or not helpful?

☐ Yes ☐ No

a) If yes, please rate how hindering the event was: ☐ Extremely hindering

☐ Greatly hindering

☐ Moderately hindering

☐ Slightly hindering

b) Please describe this event briefly:

APPENDIX R: BRAIN Power Point Information

B.R.A.I.N.
Treatment Techniques for Public Speaking Anxiety
Breathing, Relaxation, Autogenics, Imagery, & grouNding

Breathing

Breath Support
2)Public Speaking = Projection of Your Voice
3)Anxiety = Shortness/Shallowness of Breath
4)Diaphragmatic Breathing = More Oxygen
5)Diaphragmatic Breathing = More Relaxation

Chest (Thoracic) Breathing: Photo Example
Diaphragmatic Breathing: Photo Example

Diaphragmatic Breathing Exercise
- Chest (thoracic) breathing vs. abdominal (diaphragmatic) breathing
- Hand on stomach should rise more than hand on chest
- "breathe in relaxation…breathe out tension"

Progressive Muscle Relaxation

Progressive Muscle Relaxation

Progressive Muscle Relaxation for Public Speaking Requires "Natural" Relaxed Gestures
- "Fight-or-Flight" response causes muscle tension
- Learn to sense the difference between tense muscles and relaxed ones

Muscle Relaxation (Hands): Video Example

Muscle Group Relaxation
- Head, face, throat & shoulders
- Chest, stomach & lower back
- Thighs, buttocks, calves & feet
- Hands, forearms, & biceps
- Tense for 5 sec. Release for 20 sec.

Autogenics

Autogenics = Opposite of Fight/Flight
- Central Nervous System = Brain & Spinal Cord
- Peripheral Nervous System = SNS + ANS
  Somatic Nervous System = Voluntary Muscles
  Autonomic Nervous System = Involuntary Muscles

Sympathetic Division - Fight-or-Flight Response
Parasympathetic Division - Relaxation Response

Autogenics (CNS vs ANS): Anatomic Diagram
Sympathetic vs Parasympathetic: Anatomic Diagram of Organs Effected
Autogenics (with Respiratory Synchronization)
- My breathing is deep and slow
- My heartbeat is slow and regular
- My hands and arms are so warm and so heavy
- My feet and legs are so warm and so heavy
- My forehead is cool and dry

Imagery

Positive Mental Imagery = Relaxation
- Positive Multisensory Mental Imagery
  What do you see? Hear? Feel in your body?
- Core Person/Safe Place Exercise
  Pair Autogenics with Multisensory Imagery
- Create Protection Around the "Safe Place"

Your brain doesn't know the difference between the real thing (e.g., favourite food) and a mental image of that thing.

The same response is generated (saliva, etc)

CORE PERSON / SAFE PLACE EXERCISE
("Visualize the most calm, safe place you have experienced or can imagine")
Autogenics
- My hands & arms are warm & heavy
- My breathing is deep & slow
- My heartbeat is slow & regular
- My feet & legs are warm & heavy
- My forehead is cool & dry

Multisensory Imagery
- What do you see? (movement, colour)
- What do you hear? (waves, nature)
- What do you feel? (wind, sun, water)
- What do you smell? (fragrance)
- What do you taste? (drink, food)

Images of A Successful Speech
You can also imagine (using all your senses) giving a wonderful speech. See the looks of emotion on the faces of audience members. Hear the applause when you are done! Walk through and mentally rehearse every detail, from walking onto the stage, to confidently stepping down. Olympic athletes use this when preparing for their events (gymnastics, skiing, high

diving) because it works!

Multisensory Imagery
The brain has motor areas to actually trigger movement of the muscles. It also has pre-motor areas that organize the movement sequences and help with muscle memory.

There was a champion golfer who was captured as a prisoner of war. He would go through the 18 holes of a golf game each day in his mind. When released, he played better than he had before he went in!

Grounding

Grounding: Reconnect to the World in the moment
Not worrying about future performances

Sensate Focus – One Sense at a Time

Cook's Hook-Ups & Cross-Crawl
Restores Hemispheric Balance in Brain
Lowers Distress

Grounding – Sensate Focus
What do you hear?
What do you see?
What do you feel (touch)?
What do you smell?
What do you taste?

Hearing & Seeing
While waiting to get up and speak, just close your eyes and concentrate ONLY on what you hear (air conditioning, voices, etc).

While sitting in the audience or backstage, find some colour or object (or person) that is calming and make that your focus.

Tasting & Touching
Take a favourite flavour of gum or hard candy with you and pop some in your mouth while waiting. Focus your mind completely on the taste and texture.

Feel the arm of the chair you are in. Feel your feet on the floor, or your back against the chair you are sitting in. Focus ONLY on those sensations --- in the moment!

Smell - A Magical Sense for Calming
5 senses: (sight, hearing, touch, taste, & smell)

4 of the 5 senses are processed through the Thalamus (sensory processor) first, but…

One sense is processed through the Amygdala (emotion processor) first…SMELL

Brain Image:
Olfactory Bulb Amygdala
Smell = Emotion Processor
Positive Smells Instantly Calm the Emotions

Floral:
- Rose
- Lavender
- Champa

Citrus:
- Lime
- Lemon
- Orange

Wood:
- Cedar
- Pine
- Spruce

Spice:
- Clove
- Cinnamon
- Vanilla

Get Smells!
- Bring a small bottle of scented oil from three groups of smells (floral, citrus, wood)
- Put a few drops on some Kleenex tissue
- Breathe in the fragrance while waiting to give a speech or perform and it will calm your emotion processor deep in your brain quickly!

Grounding – Cook's Hook-ups
- Cross left leg over right with right leg perpendicular to the floor.
- Take right hand and grasp shin between knee and ankle.
- Cross left hand and arm over right hand and arm, and grasp shin closer to ankle

You can do this procedure while sitting and waiting to give a speech or perform and it will help

keep you calm until you go on stage!

No one can tell what you are doing, because it looks like you are just sitting comfortably with your legs crossed!

Grounding (Cross-Crawl): Photo Example

You can do a subtle version of this while sitting: Just cross your arms on your lap and alternately tap the insides or backs of your legs just above your knees.

This is so unobtrusive that you can do it any time while you are waiting to get up and speak.

More Information on BRAIN?

The Relaxation & Stress Reduction Workbook by Martha Davis, Elizabeth Robbins Eshleman & Matthew McKay Oakland, California: New Harbinger Publications

Brain Gym: Simple Activities for Whole Brain Learning by Paul Erlich Dennison & Gail E. Dennison Edu-Kinesthetics

APPENDIX S: BRAIN Techniques

Breathing **R**elaxation **A**utogenics **I**magery **G**rou**N**ing

Script for All-Participant Audiotape

prepared by

Rick Bradshaw, Ph.D.

recorded by

Marie Amos, M.A. (Cand.)

Before your start your relaxation session, locate the Amos Relaxation Effectiveness Tracking Chart and enter the numbers for your "Emotional State (Before)", "Physical State (Before)" and "Overall Distress Level (Before)" for the current day of the month.

Good times for this relaxation session may be just before or after dinner, or just before bed. Find a safe, calm, quiet place with the lights dimmed….and a comfortable, warm temperature. You may want to use scented oils or candles with soothing fragrances. It might be nice to use pillows or cushions under or around you.

Start by getting into a comfortable position, sitting or lying down. Place your hand on your abdomen. As you breathe in, allow your abdomen to rise, lifting your hand. As you breathe out, allow your hand to lower with your abdomen, as it returns to its original position. Continue this process, inhaling and exhaling deeply. Close your eyes and take a deep breath ***in***. Breathe ***in*** relaxation, and breathe ***out*** tension. Allow yourself to sigh gently, as the air flows from your lungs.

With each breath, search your body for tension, and ***melt it away***. Allow yourself to sink back into the chair, couch or bed, feeling the support under you. As you relax, follow your breathing. Go to the deepest, calmest place inside…

Notice your hands… With each breath release more tension in your hands…now release the muscles in your forearms…imagine the tension floating off your forearms…and now your biceps. Let your arms fall to your sides or in your lap, and relax your biceps. Imagine a ***warm, flowing current…***with each breath, melting more of the tension away…----…*soothing* and *smoothing* the muscles…calming. Now notice the muscles in your head and face…allow the tension to float up off your forehead and soften the skin around your eyes…Now notice your jaw. Let it slacken, and allow your mouth to open comfortably and relax.

Next, relax your throat…"*Melt away*" tension in your throat, neck, and shoulders. Go through each of these areas, and *release* more tension each time you exhale…… Let go of the tension in your face and jaw …*Lift* the tension off your forehead and face. Llet it slowly melt away from your neck and shoulders. Let the tension *dissolve* away. Continue down your body…"*letting go*" of tension and "*breathing in*" relaxation…to your chest…slowly …your stomach…and your lower back. Finally, release the tension in your lower body…with each breath …Relax and smooth the muscles… to your feet….Let the tension flow out of your feet. Allow the tension to flow out of your body, from the top of your head ***all*** the way down, and out though your feet. Let go *more*…and *more*…keep *releasing* tension as you breathe, until you find absolutely *no trace* of tension in your muscles.

Now that you're deeply relaxed, go in your mind to your own special retreat for relaxation and rest. It can be indoors or out. You'll need a private entry or pathway, and it should be peaceful, comfortable and safe. Create protection around you and over you, in your mind. Try imagining a large, in the distance. As you spend time in that place, gradually become aware of the sound of water & wind. Allow the wind and gentle waves to ebb & flow in time with your breathing… perfectly synchronized with your breathing *in*…and breathing *out*…deep, full, *relaxing* breaths…Your breathing is *deep*… and…*slow-w-w*…and your heartbeat is *slow-w-w*…and… *regular*…

Feel the sun on your skin…If you're inside, notice the warmth of the room…Your hands…and arms…are *so-o-o* warm, and *so-o-o* heavy…and your feet and legs…*so-o-o* warm…and *so-o-o* heavy…

There's a gentle breeze… through your hair… through the trees… and over your forehead. Your forehead…is *cool*…*and*…*dry-y-y*…. A beautiful fragrance is floating on the breeze…*calming*...*soothing, peaceful*…The fragrance takes you back in your mind to a time when you rested safely…*effortlessly*…to a place where you were *restored* and felt *fully alive,* in the most *positive* way…

Continue to spend time in that calm, restful, safe place…breathing *in*---deeply, and breathing *out*---fully. Breathing is *deep*…and… *slow*. Heartbeat is *slow*…and…*regular*…Notice the colours & movement in that place. Choosing the most calming, soothing colour…and allowing that **colour** to go *all* through your body, from the top of your head to the tips of your fingers and toes…..

As you focus on that color, allow **music or sounds** to enter your mind that go most naturally with the soothing colour. Let that music or sound go all through your body, from the top of your head to the tips of your toes.

Focus on the colour, sound, and calm, confident feeling, and think of an **object or shape** and **movement** that goes with those feelings, thoughts and images. It might be *soaring*, *bubbling*, or *moving effortlessly in slow motion*…Just focus on that sense of movement, and feel it *all through your body.* Also notice the **temperature** that's most comfortable.

Your hands…and arms… are *so-o-o* warm, and *so-o-o* heavy… …feet and legs…*so-o-o* warm…and *so-o-o* heavy…forehead…is *cool…and…dry-y-y*…. That beautiful fragrance is floating on the breeze…*calming...soothing...peaceful*…

Become aware of ***all*** your senses. Notice which sense activates the rest. It might be colour…sound…movement… shape… temperature…fragrance…or touch. Focus on ***one*** of your senses in your environment right now…what you hear…or see…or textures & temperatures you feel with your hands…Block out all of the other senses and just focus…second-by-second…on what you become aware of…as if you're noticing life "floating gently by" on a *slow-moving* river…Feel the support of the chair, couch or bed under you…Feel the weight of your feet and hands…

Enjoy more time in your safe, special place: The colours, movement, sounds, fragrances and temperature all combine to create a restful, relaxing experience. Breathing *in* relaxation, and

breathing *out* tension. Consider returning to the room you started your relaxation session in….gradually, at your own pace. There's no rush….Start noticing the sounds in the room and outside….

.

Cross one leg over the other…and then cross your forearms on the leg that is crossed over the lower leg...holding the shin closest to you with both hands. Remember "Cook's Hook-ups". Allow a deep sense of peacefulness and relaxation to flow over you… calming… soothing…restoring. ***Remember*** those feelings as you come back and continue your day or evening. Take that relaxation with you…

APPENDIX T: Credibility of Treatment Questionnaire

Please circle the corresponding number to answer these questions.

6) How logical does this type of treatment seem to you?

1 2 3 4 5 6 7 8 9 10
Not Logical Very Logical

2) How confident are you that this treatment will be successful in eliminating the symptoms of Public Speaking Anxiety?

1 2 3 4 5 6 7 8 9 10
Not Confident Very Confident

3) How confident would you be in recommending this treatment to a friend who was suffering from the symptoms of Public Speaking Anxiety?

1 2 3 4 5 6 7 8 9 10
Not Confident Very Confident

4) If you were suffering from extremely high levels of Public Speaking Anxiety symptoms, would you be willing to undergo such treatment?

1 2 3 4 5 6 7 8 9 10
Not Willing Very Willing

5) How successful do you think this treatment would be in decreasing the symptoms of a different anxiety disorder, such as Social Anxiety?

1 2 3 4 5 6 7 8 9 10
Not Successful Very Successful

APPENDIX U: Post-Treatment Interview

Interview Questions for Posttreatment Assessment #1

Ask each participant the following questions[1]. Printed in **bold** are the actual words to ask the participants and *italic* print gives directions to the interviewer.

Now I am going to ask you some questions about your therapeutic experience and I will be recording our conversation. Please be honest and give as much detail in response to each question as you see fit. Do you have any questions before we start? *(If they have questions, answer them, make a mental note of the question(s), then proceed to Question #1; if they have no questions proceed to Question #1)*

1. **How are you doing now as compared to when you entered the study?**

2. **In what way if any was the therapy helpful to you?**

3. **Did it have any effect on the issues that you wanted to address?**
    a. *If the participant answered yes to #3, ask them:* **Do you think that the benefits gained will be lasting?**

4. **Did the therapy affect anything else?**

5. **Were you surprised by anything that has happened since you began the study?**

6. **Do you think you will need more therapy to resolve your public speaking issues?**

[1] Questions 1-8 are taken directly from Edmond et al. (2004), p. 264. The remaining questions were added for this project.

7. **What are your thoughts and feelings about your therapist now?**

8. **How did the therapy that you received in the study compare to other therapy or counselling that you have received?**

9. **What did you like or value the most about the therapy you received?**

10. **What did you dislike or find least valuable about the therapy you received?**

11. *Either Option "a" or Option "b" is to be used for this question. DO NOT ASK BOTH OPTIONS!*

    a. *If the participant has mentioned in any of the previous questions anything about extra-therapeutic factors (relationships, family, overall disposition, etc.) that are better ask them*: **Earlier you mentioned _____** (*insert the extra-therapeutic factor they mentioned earlier*) **Can you tell me more about that?**
        i. *Ask this in follow up to Option "a"* **Is there anything else that has affected your life over the last few months besides therapy?**

    b. *If the participant did not mention anything in the previous questions about positive impacts on extra-therapeutic factors or they only mentioned negative effects of the therapy, ask them*: **So far we have been talking about the therapy you received. Now I would like to ask you a more general question, okay?** *Wait for the participant to respond in the affirmative, and then ask them:* **What has been helpful for you over the last few months besides therapy?**

APPENDIX V: Descriptive Statistics

PRCS Descriptive Statistics

	Experimental Group	Mean	Std. Deviation	N
Pre-treatment	OEI	20.60	3.29	5
	BRAIN	22.75	6.08	4
	Total	21.56	4.53	9
Post-Treatment	OEI	16.00	6.29	5
	BRAIN	16.50	8.19	4
	Total	16.22	6.70	9

BDI-II Descriptive Statistics

	Experimental Group	Mean	Std. Deviation	N
Pre-treatment	OEI	6.80	2.49	5
	BRAIN	8.25	8.26	4
	Total	7.44	5.41	9
Post-treatment	OEI	1.80	1.79	5
	BRAIN	11.25	6.99	4
	Total	6.00	6.10	9

BAI Descriptive Statistics

	Experimental Group	Mean	Std. Deviation	N
Pre-Treatment	OEI	7.00	3.94	5
	BRAIN	9.33	0.58	4
	Total	7.88	3.23	9
Post-Treatment	OEI	4.20	2.39	5
	BRAIN	10.67	2.89	4
	Total	6.00	4.10	9

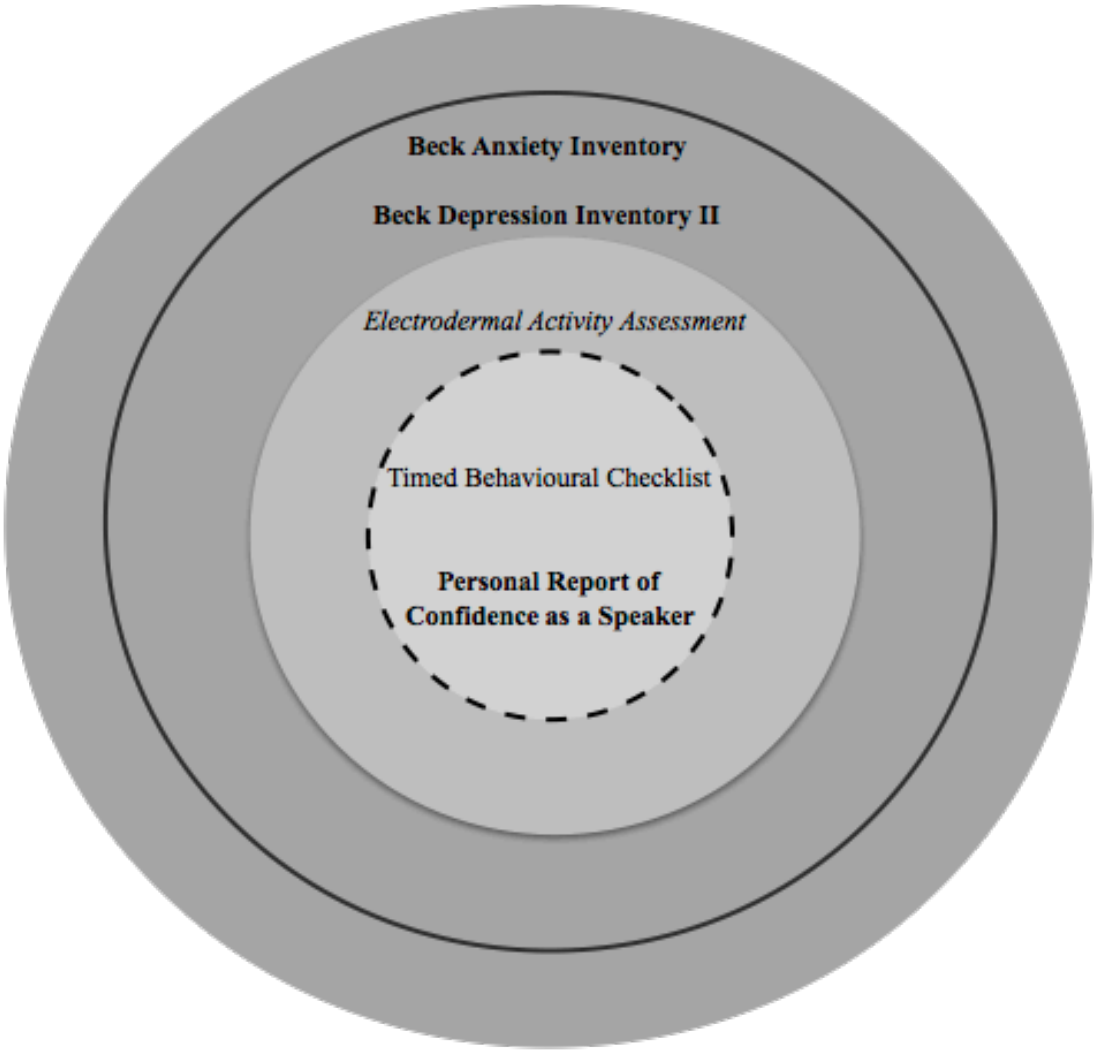
TBC Descriptive Statistics

	Experimental Group	Mean	Std. Deviation	N
Pre-treatment	OEI	36.90	10.79	5
	BRAIN	43.75	10.28	4
	Total	39.94	10.53	9
Post-treatment	OEI	23.00	11.42	5
	BRAIN	29.63	11.78	4
	Total	25.94	11.37	9

APPENDIX W: Treatment and Assessment Protocol Development for Performance Specific Social Anxiety Disorder based on Symptom Type and Treatment Strategy.

Legend

	Broad Spectrum Symptoms
	Psychophysiological Symptoms
	Narrow Spectrum Symptoms
———	Trauma-Root-Focused Treatment Activated Processes
– –	Trauma-Symptom-Focused Treatment Activated Processes
Bold Text	Self-Report Measurement
Italicized Text	Psychophysiological Measurement
Normal Text	Behavioural Measurement



Note: Treatment Activated Processes are presented as concentric circles where one encapsulates the contents of the other. The *Symptom* circles represent categories. Each of the measurement instruments employed in this project are placed in the diagram.